CHAPTER 8

Solved Problems

P.8.5 The Delhi Electrical Supply Company Ltd has a business of supplying electrical goods to various government and non-government companies. The controller, in collaboration with the economist, has developed the following equation that, he says, will forecast sales quite well, based on past pattern of behaviour: monthly sales (amount) = Rs 1,00,000 + (Rs 2,000 x orders received in prior month).

The sales manager is confused and seeks your advice. He presents you with the following data regarding actual and forecast numbers of orders. The forecasts have generally been quite accurate.

August (actual)	200
September (forecast)	300
October	450
November	700
December	650

It is the first week of September, the sales manager would like the forecasts of sales and income for as many months as you can prepare. The cost accountant informs you that costs of goods sold, which are all fixed costs, amount to Rs 2,00,000 per month.

You are required to prepare the budgeted income statement for as many months as you can.

Solution

Budgeted income statement of Delhi Electric Supply Company Ltd

Particulars	*September*	*October*	*November*	*December*	*January*
Sales:					
Fixed component	Rs 1,00,000	Rs 1,00,000	Rs 1,00,000	Rs 1,00,000	Rs 1,00,000
Variable component (Rs 2,000 × orders received in previous months)	4,00,000	6,00,000	9,00,000	14,00,000	13,00,000
Total sales	5,00,000	7,00,000	10,00,000	15,00,000	14,00,000
Less: Cost of goods sold (0.50 × of sales)	2,50,000	3,50,000	5,00,000	7,50,000	7,00,000
Contribution (manufacturing)	2,50,000	3,50,000	5,00,000	7,50,000	7,00,000
Less: Other variable costs (0.20 × sales)	50,000	70,000	1,00,000	1,50,000	1,40,000
Contribution (final)	2,00,000	2,80,000	4,00,000	6,00,000	5,60,000
Less: Fixed costs	2,00,000	2,00,000	2,00,000	2,00,000	2,00,000
Income	—	80,000	2,00,000	4,00,000	3,60,000

P. 8.6 The cost of an article at the capacity level of 5,000 units is given under A below. For a variation of 25 per cent in capacity above or below this level, the individual expenses vary as indicated under B below:

Particulars	*A*	*B (per cent)*
Material cost	Rs 25,000	100 (variable)
Labour cost	15,000	100 (variable)
Power	1,250	80 (semi-variable)
Repairs and maintenance	2,000	75 (semi-variable)
Stores	1,000	100 (variable)
(*Contd.*)		
Inspection	500	20 (semi-variable)
Administration overheads	5,000	25 (semi-variable)
Selling overheads	3,000	50 (semi-variable)
Depreciation	10,000	100 (fixed)
Total	62,750	
Cost per unit	12.55	

Prepare the production cost budget at 4,000 units and 6,000 units.

Solution

Production cost (flexible) budget

Particulars	*4,000 units*	*6,000 units*
Material cost (variable)	Rs 20,000	Rs 30,000
Labour cost (variable)	12,000	18,000
Stores (variable)	800	1,200
Power (semi-variable)	1,050	1,450
Repairs and maintenance (semi-variable)	1,700	2,300
Inspection (semi-variable)	480	520
Administration overheads (semi-variable)	4,750	5,250
Selling overheads (semi-variable)	2,700	3,300
Depreciation (fixed)	10,000	10,000
Total	53,480	72,020
Cost per unit	13.37	12.00

P.8.7 The Jay Engineering Limited manufacturers only one product, which passes through three departments. A study has been made by the cost accountant in consultation with engineers, technicians and other production experts of the variability of overheads. Each item was carefully analysed and the results are summarised as follows:

Department 2; Normal level of activity, 5,000 machine-hours.

Overheads	*Fixed amount*	*Variable rate per machine-hour*
Indirect material	Rs 1,200	Rs 0.20
Supervision and inspection	9,600	—
Indirect labour	2,400	0.40
Repairs and maintenance	1,800	0.30
Power, heat and light	4,200	1.20
Water	1,200	0.10
Telephone	2,400	0.10
Insurance	3,000	—
Depreciation	9,600	—
Miscellaneous	600	0.10
	36,000	2.40
Machine hour rate at normal level of activity:		
Fixed (Rs 36,000 ÷ 5,000 hours)		7.20
Variable		2.40
Total		9.60

The study has estimated the following results for a level of activity of 7,000 machine-hours:

1. Indirect labour will increase by Rs 800.
2. Increased supervision will be needed at a cost of Rs 1,400.
3. Increased maintenance and repairs are estimated at Rs 600.
4. Machinery will depreciate more rapidly than estimated at the normal level of activity to the extent of Rs 1,400.
5. Overtime will cost Rs 3,200.

Prepare a flexible budget at 4,000, 5,000, 6,000 and 7,000 machine-hours and also determine the machine-hour rate at these levels.

Solution

Department 2: flexible budget

Overheads	*Level of activity in machine-hours*			
	4,000	*5,000*	*6,000*	*7,000*
Indirect material	Rs 2,000	Rs 2,200	Rs 2,400	Rs 2,600
Supervision and inspection	9,600	9,600	9,600	11,000
Indirect labour	4,000	4,400	4,800	6,000
Repairs and maintenance	3,000	3,300	3,600	4,500
Power, heat and light	9,000	10,200	11,400	12,600
Water	1,600	1,700	1,800	1,900
Telephone	2,800	2,900	3,000	3,100

Insurance	3,000	3,000	3,000	3,000
Depreciation	9,600	9,600	9,600	11,000
Overtime cost	—	—	—	3,200
Miscellaneous	1,000	1,100	1,200	1,300
	45,600	48,000	50,400	60,200
Machine-hour rate	11.40	9.6	8.4	8.6

P.8.8 A company is drawing its production plan for the next year in respect of two of its products 'Gamma' and 'Delta'. The company's policy is not to carry any closing work-in-process (WIP) at the end of any month. However, its policy is to hold a closing stock of finished goods at 50 per cent of the anticipated quantity of sales of the succeeding month. For the next year, the company's budgeted production is 20,000 units of 'Gamma' and 25,000 units of 'Delta'. The following is the estimated cost data:

Particulars	*Gamma*	*Delta*
Direct material per unit	Rs 50	Rs 80
Direct labour per unit	20	80
Other manufacturing expenses apportionable to each type of product based on production	2,00,000	3,75,000

The estimated units to be sold in the first 7 months of the next year are as under:

Particulars	*April*	*May*	*June*	*July*	*August*	*September*	*October*
Gamma	900	1100	1400	1800	2200	2200	1800
Delta	2900	2900	2500	2100	1700	1700	1900

You are required to

(a) Prepare a production budget showing month-wise number of units to be manufactured:

(b) Present a summarised production cost budget for the half-year ending September 30.

Solution

(a) **Production budget (units) for the half year ending September 30**

Particulars	*April*	*May*	*June*	*July*	*August*	*September*	*Total*
Product—Gamma:							
Budgeted sales	900	1,100	1,400	1,800	2,200	2,200	9,600
Add: Closing stock	550	700	900	1,100	1,100	900	900
	1,450	1,800	2,300	2,900	3,300	3,100	10,500
Less: Opening stock	450	550	700	900	1,100	1,100	450
Budgeted production	1,000	1,250	1,600	2,000	2,200	2,000	10,050
Product—Delta:							
Budgeted sales	2,900	2,900	2,500	2,100	1,700	1,700	13,800
Add: Closing stock	1,450	1,250	1,050	850	850	950	950
	4,350	4,150	3,550	2,950	2,550	2,650	14,750
Less: Opening stock	1,450	1,450	1,250	1,050	850	850	1,450
Budgeted production	2,900	2,700	2,300	1,900	1,700	1,800	13,300

(b) **Cost budget for the half year ending September 30**

Particulars (units)	*Gamma (10,050 units)*		*Delta (13,300 units)*	
	Total	*Per unit*	*Total*	*Per unit*
Direct material	Rs 5,02,500	Rs 50	Rs 10,64,000	Rs 80
Direct labour	2,01,000	20	3,99,000	30
Other manufacturing expenses[1]	1,00,500	10	1,99,500	15
	8,04,000	80	16,62,500	125

[1]Other manufacturing expenses are apportioned on the basis of production.

	Gamma	*Delta*
1. Units to be produced	20,000	25,000
2. Other manufacturing expenses	Rs 2,00,000	Rs 3,75,000
3. Per unit (2 ÷ 1)	10	15

P.8.9 The GEC Ltd manufacturers pumps used in coolers. The firm has developed a forecasting tool that has been successful in predicting sales for the company: Sales = 10,000 + (0.25 × coolers sold). The coming year's cooler sales are expected to be 2,00,000.

The pump contains material costing Rs 50. Direct labour is Rs 60 per unit and variable manufacturing overhead is Rs 40 per pump. Besides the variable manufacturing costs, there are commissions to sales people of 10 per cent of sales amount. The pump sells for Rs 250 per unit. Fixed costs of manufacturing are Rs 10,00,000 per year and fixed selling and administrative expenses are Rs 5,00,000 per year. Both are incurred evenly over the year.

Sales are seasonal, and about 75 per cent are in the April-September period which begins from April 1. The sales forecast by months, as percentages of yearly sales, are given below:

April	10	August	8
May	15	September	7
June	20	October	5
July	15	November	3

The company has a policy of keeping inventory of finished product equal to the budgeted sales for the following two months. Materials are purchased and delivered daily and no inventory is kept. The inventory of finished product on March 31 is expected to be 15,500 units.

You are required to prepare a:

(i) Budgeted income statement for the coming year

(ii) Budgeted income statement for the first six months of the year.

(iii) Production budget by months for the first six months, in unit.

Solution

(i) and (ii) Budgeted income statement

Particulars	*Six months*	*Year*
Sales (units)	45,000	60,000
Sales price per unit	Rs 250	Rs 250
Total sales revenue	1,12,50,000	1,50,00,000
Less:	*Variable costs*:	
Materials (Rs 60 per unit)	22,50,000	30,00,000
Labour (Rs 50 per unit)	27,00,000	36,00,000
Overheads (Rs 40 per unit)	18,00,000	24,00,000
Contribution (manufacturing)	45,00,000	60,00,000
Less:	Sales commission (0.10 × sales)	11,25,000
15,00,000		
Contribution (final)	33,75,000	45,00,000
Less:	*Fixed costs*	
Manufacturing	5,00,000	10,00,000
Selling and administrative	2,50,000	5,00,000
Income	26,25,000	30,00,000

(iii) Production budget (units)

Month	*Sales*	*Planned inventory*		*Required production*
		Closing	*Opening*	*(Col. 2 + 3 – 4)*
1	*2*	*3*	*4*	*5*
April	6,000	21,000	15,500	11,500
May	9,000	21,000	21,000	9,000
June	12,000	13,800	21,000	4,800
July	9,000	9,000	13,800	4,200
August	4,800	7,200	9,000	3,000
September	4,200	4,800	7,200	1,800

Working Notes

(i) Sales forecasts for the coming year = 10,000 + (0.25 × 2,00,000) = 60,000 units

Sales forecasts by month (units):

April (0.10)	6,000
May (0.15)	9,000
June (0.20)	12,000
July (0.15)	9,000

August (0.08)	4,800
September (0.07)	4,200 = 45,000 units (75 per cent)
October (0.05)	3,000
November (0.03)	1,800

Review Questions

8.15 One of the major items of sale of Sujan Distribution Company Ltd is the Kores Stapler. In order to secure a special discount on the purchase of staplers, the company entered into a contract on January 1, with the manufacturers of Kores Staplers to stabilise purchases (that is, to ensure purchase of the same number of staplers each month). Budgeted sales of staplers for the year are:

January	Rs 14,400	July	Rs 12,000
February	14,880	August	10,560
March	16,800	September	14,400
April	13,320	October	16,800
May	15,840	November	17,280
June	14,400	December	18,720

Under the terms of the new contract, staplers cost the company Rs 1.80 each; they are marketed for
Rs 2.40 each. On January 1, the company had 4,000 staplers on hand which had a cost of Rs 8,000; Desired final inventory is 6,000 units.

With the above information, prepare a purchase budget by months for the year in units and rupees.

8.16 Production costs of a factory for a year are as follows:

Direct wages	Rs 80,000
Direct materials	1,20,000
Product overheads: Fixed	40,000
Variable	60,000

During the coming year it is anticipated that:

(a) The average rate for direct labour remuneration will fall from Rs 0.80 per hour to Rs 0.75 per hour.

(b) Production efficiency will be reduced by 5 per cent.

(c) Price per unit of direct material and of other materials and services which comprise overheads will remain unchanged, and

(d) Production in the coming year will increase by 33.33 per cent. Draw up a production cost budget.

8.17 The direct labour hour requirements (per unit in minutes) of the three of the products manufactured in a factory, each involving more than one labour operation, are estimated as follows:

Particulars		*Product*		
		1	2	3
Operation	1	18	42	30
	2	—	12	24
	3	9	6	—

The factory works eight hours per day, six days a week. The budget quarter is taken as 13 weeks and during a quarter, lost hours due to leave and holidays and other causes are estimated to be 124.

The budgeted hourly rates for the workers manning operations 1, 2 and 3 are: Rs 2, Rs 2.50 and Rs 3 respectively.

The budgeted units sales of the products during the quarter are: Products 1: 9,000; 2: 15,000; 3: 12,000.

There is a carryover of 5,000 units of Product 2 and 4,000 units of Product 3 and it is proposed to build up a stock at the end of the budget quarter as follows: Product 1, 1,000 units; Product 2, 2,000 units.

Prepare a manpower budget for the quarter showing (i) Direct labour-hours, (ii) Direct labour cost, and (iii) The number of workers for each operation.

8.18 Prepare a flexible budget from the following data made available in respect of a half-yearly period and forecast the working results at 70, 85, and 100 per cents capacity when the respective sales are Rs 50 lakh, Rs 60 lakh and Rs 85 lakh. While fixed expenses remain constant, semi-variable expenses are constant between 55 and 75 per cent of capacity, increasing by 10 per cent between 75 and 90 per cent capacity and by 20 per cent between 90 and 100 per cent capacity. The expenses at 60 per cent capacity are as follows:.

Semi-variable	:	Maintenance and repairs	Rs 1.25
		Indirect labour	5.00
		Sales department expenses	1.50
		Sundry overheads	1.25
Variable	:	Material	12.00
		Labour	13.00
		Other expenses	2.00
Fixed	:	Wages and salaries	4.20
		Rent, rate and taxes	2.80
		Depreciation	3.50
		Sundry overheads	4.50
			51.00

8.19 The following data are available of a manufacturing company for a half-yearly period.

Fixed expenses:		Variable expenses at 50 per cent of capacity:	
Wages and salaries	Rs 8.4	Materials	Rs 24.0
Rent rate and taxes	5.6	Labour	25.6
Depreciation	7.0	Other expenses	3.8
Sundry administrative expenses	8.9		
	17.9		53.4
Semi-variable expenses:			
At 50 per cent of capacity			
Maintenance and repairs	2.5		
Indirect labour	9.9		
Sales department salaries, etc.	2.9		
Sundry administrative expenses	2.6		
	17.9		

Assume that the fixed expenses remain constant for all levels of production, semi-variable expenses remain constant between 45 and 65 per cent of capacity, increasing by 10 per cent between 65 and 80 per cent capacity and by 20 per cent between 80 and 100 per cent capacity.

Sales at 50 per cent capacity are Rs 85,00,000; 60 per cent capacity, Rs 1,00,00,000; 75 per cent capacity, Rs 1,20,00,000; 90 per cent capacity, 1,50,00,000 and 100 per cent capacity, Rs 1,70,00,000.

Prepare a flexible budget for the half year and forecast the profits at 60, 75, 90 and 100 per cents capacity.

8.20 The demand for the output of a certain company is very elastic and the modern plant recently installed is capable of greatly increased production. Output at present is 80,000 units per year, and the capacity of the new plant is expected to be five lakh units. The present selling price per unit is Rs 15.

A need for flexible budgeting is recognised and six alternative levels of output in addition to the present level are contemplated. Six equal increments in annual output level, up to a maximum of 5,00,000 units, would involve corresponding reductions of Re 1 each in unit price to Rs 9 per unit at the maximum output.

The present variable costs amount to Rs 4,00,000. Fixed costs which at present amount to Rs 2,00,000 are not expected to increase for any of the six alternative output levels contemplated. Semi-fixed cost are expected to vary from the present annual figure of Rs 2,30,000 to Rs 3,20,000, the upward steps being: Rs 2,60,000 at 2,20,000 units, Rs 2,80,000 at 3,60,000 units, and Rs 3,20,000 at 5,00,000 units. The costs classified as variable at the six projected levels of output are calculated to be as follows:

Rs 7,50,000	Rs 11,00,000	Rs 15,00,000
17,50,000	20,50,000	25,00,000

Answers

8.15 January (16,400 units, Rs 29,520); February (14,880 units, Rs 26,784); March (16,800 units, Rs 30,240); April (13,320 units, Rs 23,976); May (15,840 units, Rs 28,512); June (14,400 units, Rs 25,920); July (12,000 units, Rs 21,600), August (10,560 units, Rs 19,008); September (14,400 units Rs 25,920); October (16,800 units, Rs 30,240); November (17,280 units, Rs 31,104); December (18,720) units, Rs 33,696).

8.16 Total production costs, Rs 3,89,000.

8.17 Desired production of product 1 (10,000 units), product 2 (12,000 units), product 3 (8,000 units); Effective labour hours required: 15,400, 5,600 and 2,700 for products 1, 2 and 3 respectively; Gross labour hours required 19219, 2, 6988.8, 3369.6: Rs 66019.20 direct labour cost. Number of workers 31, 12, 6.

8.18 Budgeted income rupees in lakh at various capacity levels: Loss 5.5 (70 per cent capacity) Loss 3.15 (85 per cent capacity), and profit 14.20 (100 per cent capacity).

8.19 Loss Rs 11.88 lakh (60%), loss Rs 9.69 (75%), Profit Rs 2.5 lakh (90%), Profit Rs. 11.82 lakh (100%).

8.20 Budget income (in lakh of rupees) Rs 3.7 (80,000 units) Rs 9.2 (1,50,000 units), Rs 13.00 (2,20,000 units), Rs 15.20 (2,90,000 units), Rs 17.3 (3,60,000 units), Rs 17.7 (4,30,000 units), Rs 14.80 (5,00,000 units)

Comprehensive Case

SOUND FUTURE COMMUNICATIONS LIMITED

Sound Future Communications Limited (SFCL) is planning profit for the current year. The Chairman and Managing Director of the Company, Mr Wise has asked the Accounts and Finance Department to prepare the budget outlining the implications of achieving the profit goal of Rs 7 lakh. The Budgeting Department has compiled the information related to its operating and financing activities as detailed in schedules I to VIII.

I. **Balance Sheet as at March 31 of the Current Year**

Liabilities	*Amount*	*Assets*		*Amount*
Share capital	Rs 31,77,428	Fixed assets	Rs 48,00,000	
Retained earnings	18,96,400	*Less:* Accumulated		
Creditors	44,000	depreciation	(12,00,000)	Rs 36,00,000
Taxes payable	74,000	Inventories:		
		Direct materials	1,35,828	
		Finished goods	1,60,000	2,95,828
		Debtors	11,20,000	
		Less: Provision for		
		bad debts	(64,000)	10,56,000
		Cash		2,40,000
	51,91,828			51,91,828

Notes: (i) Debtors include Rs 1,60,000 from the third quarter sales of Rs 20,00,000 and Rs 9,60,000 from fourth quarter sales of Rs 12,00,000; (ii) Direct materials include 6,300 kgs of material A @ Rs 5.88 per kg and 12,600 kgs of material B @ Rs 7.84 per kg; and (iii) Finished goods include 4,000 units @ Rs 40 per unit.

II. *Budget assumptions*

(i) Selling price, Rs 60 per unit

(ii) Quarterly sales forecast (units)

Quarter	*Next year*	*Year following next year*
First	20,000	30,000
Second	30,000	
Third	40,000	
Fourth	20,000	

III. *Inventory policy*

— Finished goods: 20 per cent of the following quarter's requirements at the end of each quarter.

— Raw materials: 30 per cent of the following quarter's requirements at the end of each quarter.

— The firm wishes to have 9,200 kgs of each type of direct material on hand at March 31 of the next year.

IV. *Manufacturing cost per unit*		
Direct materials:		
1 kg of A @ Rs 5.88	Rs 5.88	
2 kgs of B @ Rs 7.84	15.68	Rs 21.56
Direct labour: 0.5 × direct labour-hour @ Rs 8		4.00
Overheads:		
Variable (0.5 × direct labour-hour @ Rs 12)	6.00	
Fixed (Rs 8,44,000 per year/Normal level of activity, 1,00,000 units)	8.44	14.44
Total		40.00

The quarterly fixed manufacturing costs of Rs 2,11,000 include depreciation totaling Rs 50,000. All production variances are written off as an adjustment to the cost of goods sold in the period in which they occurred. The firm follows absorption costing method for income determination.

V. *Selling and administrative costs*:

Commission and distribution, Rs 6 per unit sold

Advertising, Rs 10,000 per quarter

Administrative, Rs 20,000 per quarter.

VI. *Cash disbursement policy*: Raw materials are purchased on terms of 2/10, net/30. Discount is always taken and purchases are recorded at net; 90 per cent of the purchases are paid for in the quarter of purchase and remainder are paid for in the following quarter. The list prices of materials A and B are Rs 6 per kg and Rs 8 per kg respectively. With the exception of income taxes, which are paid during the following quarter, all other payments are made when incurred.

VII. *Cash collection experience*: 20 per cent sales are for cash and 80 per cent are on credit. The terms of sales are 2/10, net/60 days. However, for payments, the sales are billed to customers on the first day of the following quarter; 50 per cent of the credit sales are collected during the discount period and another 40 per cent are received after the discount period but during the quarter in which the billing is done; 7.5 per cent are received during the following quarter and 2.5 per cent are bad debts. These accounts are written off at the end of the 2nd quarter following the sales. A provision of 2 per cent of sales is made for bad debts at the time of sales. Sales discounts are recorded as a deduction from sales in the quarter the discounts are taken. Based on prior experience, this deduction equals 0.8 per cent of the previous quarter's sales (0.8 × 0.5 × 0.02).

VIII. *Other information:*

—Income tax rate is 50 per cent.

—Cash dividends amount to Rs 80,000 at the end of quarter 2 and quarter 4.

—At the end of the 4th quarter, equipment costing Rs 6,00,000 was purchased.

Prepare a comprehensive, quarter-wise, budget to show the projected income of SFCL for the year.

Solution

Quarter-wise Sales Forecast Schedule

Quarter	*First*	*Second*	*Third*	*Fourth*	*Total*
Units sales	20,000	30,000	40,000	20,000	1,10,000
Unit sale price	× Rs 60	× Rs 60	× Rs 60	× Rs 60	× Rs 60
Sales revenue	12,00,000	18,00,000	24,00,000	12,00,000	66,00,000

Production Budget (Units)

Quarter	*First*	*Second*	*Third*	*Fourth*	*Total*
Sales	20,000	30,000	40,000	20,000	1,10,000
Add: Desired closing inventory (0.20 × next quarter)	6,000	8,000	4,000	6,000	6,000
Total finished goods requirement	26,000	38,000	44,000	26,000	1,16,000
Less: Opening Inventory	4,000	6,000	8,000	4,000	4,000
Required production	22,000	32,000	36,000	22,000	1,12,000

Quarterly Manufacturing Cost Budget

Quarter	*First*	*Second*	*Third*	*Fourth*	*Total*

Required production (units)	22,000	32,000	36,000	22,000	1,12,000
Variable costs:					
A (Rs 5.88 per unit)	Rs 1,29,360	Rs 1,88,160	Rs 2,11,680	Rs 1,29,360	Rs 6,58,560
B (Rs 15.68 per unit)	3,44,960	5,01,760	5,64,480	3,44,960	17,56,160
Direct labour (Rs 4 per unit)	88,000	1,28,000	1,44,000	88,000	4,48,000
Overheads (Rs 6 per unit)	1,32,000	1,92,000	2,16,000	1,32,000	6,72,000
	6,94,320	10,09,920	11,36,160	6,94,320	35,34,720
Fixed costs:					
Depreciation	50,000	50,000	50,000	50,000	2,00,000
Other overheads	1,61,000	1,61,000	1,61,000	1,61,000	6,44,000
	2,11,000	2,11,000	2,11,000	2,11,000	8,44,000
Total costs	9,05,000	12,20,920	13,47,160	9,05,320	43,78,720
Budgeted fixed costs	2,11,000	2,11,000	2,11,000	2,11,000	8,44,000
Less: Fixed costs charged (@Rs 8.44 per unit)	1,85,680	2,70,080	3,03,840	1,85,680	9,45,280
Capacity variance	25,320 (Unfavourable)*	59,080 (Favourable)**	92,840 (Favourable)	25,320 (Unfavourable)	1,01,280 (Favourable)

*Under-recovery/under-absorption of fixed costs;
**Over-recovery/over-absorption of fixed costs.

Quarterly Purchase Budget of Raw Materials

Quarter	*First*	*Second*	*Third*	*Fourth*	*Total*
Material (A):					
Production requirement (in units)	22,000	32,000	36,000	22,000	1,12,000
Raw material required @ 1 kg per unit	22,000	32,000	36,000	22,000	1,12,000
Add: Desired ending inventory (30 per cent of the next quarter's requirement)	9,600	10,800	6,600	9,200	9,200
Total requirement	31,600	42,800	42,600	31,200	1,21,200
Less: Opening inventory	6,300	9,600	10,800	6,600	6,300
Purchase requirement (kgs)	25,300	33,200	31,800	24,600	1,14,900
Purchase cost (@ Rs 5.88 per kg)	Rs 1,48,764	Rs 1,95,216	Rs 1,86,984	Rs 1,44,648	Rs 6,75,612
Material (B):					
Raw material required @ 2 kg per unit)	44,000	64,000	72,000	44,000	2,24,000
Add: Desired ending inventory (30 per cent of the next quarter's requirement)	19,200	21,600	13,200	9,200	9,200
Total requirements	63,200	85,600	85,200	53,200	2,33,200
Less: Opening inventory	12,600	19,200	21,600	13,200	12,600
Purchase requirement (kgs)	50,600	66,400	63,600	40,000	2,20,600
Purchase cost (@ Rs 7.84 per kg)	Rs 3,96,704	Rs 5,20,576	Rs 4,98,624	Rs 3,13,600	Rs 17,29,504
Total purchase cost **(A + B)**	5,45,468	7,15,792	6,85,608	4,58,248	24,05,116

Quarterly Selling and Administrative Expenses Budget

Quarter	*First*	*Second*	*Third*	*Fourth*	*Total*
Units sales	20,000	30,000	40,000	20,000	1,10,000
Variable costs:					
Commission and distribution (Rs 6 per unit)	Rs 1,20,000	Rs 1,80,000	Rs 2,40,000	Rs 1,20,000	Rs 6,60,000
Fixed costs:					
Advertising	10,000	10,000	10,000	10,000	40,000
Administrative	20,000	20,000	20,000	20,000	80,000

	30,000	30,000	30,000	30,000	1,20,000
Total	1,50,000	2,10,000	2,70,000	1,50,000	7,80,000

Qarterly Budgeted Income Statement (Absorption Costing)

Quarter	*First*	*Second*	*Third*	*Fourth*	*Total*
Sales revenue	Rs 12,00,000	Rs 18,00,000	Rs 24,00,000	Rs 12,00,000	Rs 66,00,000
Less: Provision for bad and doubtful debts (0.02 × sales)	24,000	36,000	48,000	24,000	1,32,000
Less: Sales discount (0.8 × previous quarter's sales)	9,600	9,600	14,400	19,200	52,800
Net sales	11,66,400	17,54,400	23,37,600	11,56,800	64,15,200
Less: Cost of goods sold (@ Rs 40 per unit)	8,00,000	12,00,000	16,00,000	8,00,000	44,00,000
Gross margin (unadjusted)	3,66,400	5,54,400	7,37,600	3,56,800	20,15,200
Add: Capacity variance favourable					
Less: Unfavourable	(25,320)	59,080	92,840	(25,320)	1,01,280
Gross margin (adjusted)	3,41,080	6,13,480	8,30,440	3,31,480	21,16,480
Less: Selling and administrative costs	1,50,000	2,10,000	2,70,000	1,50,000	7,80,000
Earnings before taxes	1,91,080	4,03,480	5,60,440	1,81,480	13,36,480
Less: Taxes (0.50)	95,540	2,01,740	2,80,220	90,740	6,68,240
Earnings after taxes	95,540	2,01,740	2,80,220	90,740	6,68,240

Quarterly Budgeted Statement of Retained Earnings

Quarter	*First*	*Second*	*Third*	*Fourth*	*Total*
Opening balance	Rs 18,96,400	Rs 19,91,940	Rs 21,13,680	Rs 23,93,900	Rs 18,96,400
Add: Earnings after taxes	95,540	2,01,740	2,80,220	90,740	6,68,240
Closing balance	19,91,940	21,93,680	23,93,900	24,84,640	25,64,640
Less: Dividends paid	—	80,000	—	80,000	1,60,640
Closing balance	19,91,940	21,13,680	23,93,900	24,04,640	24,04,640

Quarterly Schedule Relating to Collection from Debtors

Quarter	*First*	*Second*	*Third*	*Fourth*	*Total*
Opening balance	Rs 11,20,000	Rs 10,56,000	Rs 15,36,000	Rs 20,64,000	Rs 11,20,000
Add: Credit sales	9,60,000	14,40,000	19,20,000	9,60,000	52,80,000
Total amount due	20,80,000	24,96,000	34,56,000	30,24,000	64,00,000
Less: Collection:					
(i) During discount period (0.50 × prior quarter credit sales)	4,80,000	4,80,000	7,20,000	9,60,000	26,40,000
(ii) After discount period (0.40 × prior quarter credit sales)	3,84,000	3,84,000	5,76,000	7,68,000	21,12,000
(0.075 × 2nd prior quarter credit sales)	1,20,000	72,000	72,000	1,08,000	3,72,000
(*Contd.*)					
Written-off bad debts (0.025 × credit sales of 2nd prior quarter credit sales)	40,000	24,000	24,000	36,000	1,24,000
Closing balance	10,56,000	15,36,000	20,64,000	11,52,000	11,52,000

Quarterly Schedule Relating to Payment to Creditors

Particulars	*First*	*Second*	*Third*	*Fourth*	*Total*
Opening balance	Rs 44,000	Rs 54,546.80	Rs 71,579.20	Rs 68,560.80	Rs 44,000
Add: Credit purchases (net of discount)	5,45,468	7,15,792.00	6,85,608.00	4,58,248	24,05,116
Total amount payable	5,89,468	7,70,338.80	7,57,187.20	5,26,808,80	24,49,116
Less: Payments:					
(i) During the same quarter (0.90)	4,90,921.20	6,44,212.80	6,17,047.20	4,12,423.20	21,64,604.4
(ii) For the prior quarter (0.10)	44,000.00	54,546.80	71,579.20	68,560.80	2,38,686.8
Closing balance	54,546.80	71,579.20	68,560.80	45,824.80	45,824.8

Quarterly Cash Budget

Particulars	*First*	*Second*	*Third*	*Fourth*	*Total*
Cash inflows:					
Cash sales (0.20)	Rs 2,40,000	Rs 3,60,000	Rs 4,80,000	Rs 2,40,000	Rs 13,20,000
Collection from debtors:					
Credit sales subject to discount (0.50)	4,80,000	4,80,000	7,20,000	9,60,000	26,40,000
Less: Discount (0.02)	9,600	9,600	14,400	19,200	52,800
Net amount	4,70,400	4,70,400	7,05,600	9,40,800	25,87,200
0.40 × prior quarter credit sales	3,84,000	3,84,000	5,76,000	7,68,000	21,12,000
0.075 × 2nd prior quarter sales	1,20,000	72,000	72,000	1,08,000	3,72,000
Total collections from debtors	9,74,400	9,26,400	13,53,600	18,16,800	50,71,200
Total cash inflows	12,14,400	12,86,400	18,33,600	20,56,800	63,91,200
Cash outflows:					
Payment to creditors	Rs 5,34,921.20	Rs 6,98,759.60	Rs 6,88,626.40	Rs 4,80,984.00	Rs 24,03,291.20
Direct labour	88,000	1,28,000.00	1,44,000	88,000	4,48,000.00
Variable overheads	1,32,000	1,92,000	2,16,000	1,32,000	6,72,000.00
Fixed overheads	1,61,000	1,61,000	1,61,000	1,61,000	6,44,000.00
Selling and administrative overheads	1,50,000	2,10,000	2,70,000	1,50,000	7,80,000.00
Income taxes	74,000	95,540	2,01,740	2,80,220	6,51,500.00
Dividends	—	80,000	—	80,000	1,60,000.00
Equipment	—	—	—	6,00,000	6,00,000.00
Total cash outflows	11,39,921.20	15,65,299.60	16,81,366.40	19,72,204	63,58,791.20
Net cash inflows	74,478.80	(2,78,899.60)	1,52,233.6	84,596.00	32,408.8
Opening balance	2,40,000.00	3,14,478.80	35,579.2	1,87,812.80	2,40,000.0
Closing balance	3,14,478.80	35,579.20	1,87,812.80	2,72,408.80	2,72,408.8

Budgeted Balance Sheet as at March 31, Next Year

Liabilities	*Amount*	*Assets*		*Amount*
Share capital	Rs 31,77,428	Fixed assets	Rs 54,00,000	
Retained earnings	24,04,640	*Less:* Accumulated depreciation	14,00,000	Rs 40,00,000
Creditors	45,824.80	Inventories:		
Taxes payable	90,740	Direct material (Material A, 9,200 × Rs 5.88) (Material B, 9,200 × Rs 7.84)	1,26,224	
		Finished goods (6,000 × Rs 40)	2,40,000	3,66,224
		Debtors	11,52,000	
		Less: Allowances for bad debts (Rs 64,000 + Rs 1,32,000 – Rs 1,24,000)	72,000	10,80,000
		Cash		2,72,408.80
	57,18,632.8			57,18,632.8