CHAPTER 14

Solved Problems

P.14.10 From the following information, prepare cash budget of a business firm for the month of April.

(a) The firm makes 20 per cent cash sales. Credit sales are collected 40, 30 and 25 per cent in the month of sales, month after and second month after sales, respectively. The remaining 5 per cent becomes bad debts.

(b) The firm has a policy of buying enough goods each month to maintain its inventory at two and one-half times the following month's budgeted sales.

(c) The firm is entitled to 2 per cent discount on all its purchases if bills are paid within 15 days and the firm avails of all such discounts. Monthly purchases are made in two equal lots on fortnightly basis.

(d) Cost of goods sold, without considering the 2 per cent discount, is 50 per cent of selling prices. The firm records inventory net of discount.

(e) Other data is:

Sales

January (actual)	Rs 1,00,000
February (actual)	1,20,000
March (actual)	1,50,000
April (budgeted)	1,70,000
May (budgeted)	1,40,000

Inventory on March 31, Rs 2,25,400.
Cash on March 31, Rs 30,000.
Gross purchases in March, Rs 1,00,000.
Selling, general and administrative expenses budgeted for April, Rs 45,000 (includes Rs 10,000 depreciation).

Solution

Cash budget for the month of April

Particulars		*Amount*
(a) Cash inflows		
Balance in the beginning April I		Rs 30,000
Collection from sales		
Cash sales (0.20 × Rs 1,70,000)		34,000
Collection from debtors:		
For February sales	Rs (0.25 × Rs 96,000)	24,000
For March sales	(0.30 × 1,20,000)	36,000
For April sales	(0.40 × 1,36,000)	54,400
Total		1,78,400
(b) Cash outflows		
Payment for purchases		
March (Rs 1,00,000 × 0.98 × 1/2)		49,000
April (Rs 29,400 × 1/2) (see purchase budget)		14,700
Selling, general and administrative expenses (Rs 45,000 – Rs 10,000)		35,000
Total		98,700
(c) Budgeted cash balance [end of April (a – b)]		79,700

Working Notes

Purchase budget (April)	*Gross*	*Net*
Desired ending inventory—gross (Rs 1,40,000 × 0.50 × 2.5)	Rs 1,75,000	Rs 1,71,500
Add: Cost of sales in April—gross (Rs 1,70,000 × 0.50)	85,000	83,300
Total requirements	2,60,000	2,54,800
Less: Beginning inventory—gross (Rs 2,25,400 × 100/98)	2,30,000	2,25,400
Required purchases	30,000	29,400

P.14.11 Prepare cash budget for January-June from the following information:

(i) The estimated sales and expenses are as follows:

Particulars	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*March*	*April*	*May*	*June*
Sales (Rs)	2,00,000	2,20,000	1,20,000	1,00,000	1,50,000	2,40,000	2,00,000	2,00,000
Wages and salaries (Rs)	30,000	30,000	24,000	24,000	24,000	30,000	27,000	27,000
Miscellaneous expenses (Rs)	27,000	27,000	21,000	30,000	24,000	27,000	27,000	27,000

(ii) 20 per cent of the sales are on cash and balance on credit.
(iii) The firm has a gross margin of 25 per cent on sales.
(iv) 50 per cent of the credit sales are collected in the month following the sales, 30 per cent in the second month and 20 per cent in the third month.
(v) Material for the sale of each month is purchased one month in advance on a credit for two months.
(vi) The time-lag in the payment of wages and salaries is one-third of a month and of miscellaneous expenses, one month.
(vii) Debentures worth Rs 40,000 were sold in January.
(viii) The firm maintains a minimum cash balance of Rs 40,000. Funds can be borrowed @ 12 per cent per annum in the multiples of Rs 1,000, the interest being payable on monthly basis.
(ix) Cash balance at the end of December is Rs 60,000.

Solution

Cash budget (January-June) (Amount in thousands of rupees)

Particulars	*January*	*February*	*March*	*April*	*May*	*June*
(a) Cash inflows						
Cash sales (20% of total sales)	24	20	30	48	40	40
Collection from debtors:						
– 50% in the month following	88	48	40	60	96	80
– 30% in the second month	48	52.8	28.8	24	36	57.6
– 20% in the third month	—	32.0	35.2	19.2	16	24
Issue of debentures	40	—	—	—	—	—
Total	200	152.8	134.0	151.2	188	201.6
(b) Cash outflows						
Payment to creditors (working note 2)	165	90	75	112.5	180	150
Wages and salaries						
1/3 of last month	10	8	8	8	10	9
2/3 of current month	16	16	16	20	18	18
Miscellaneous expenses (one month's time-lag)	27	21	30	24	27	27
Total	218	135	129	164.5	235	204
(c) Cash surplus/deficiency) [a – b]	(18)	17.8	5	(13.3)	(47)	(2.4)
Beginning balance	60	42	59.8	64.8	51.5	40.5
Ending balance (indicated)	42	59.8	64.8	51.5	4.5	38.1
Payment of interest (working note 1)	—	—	—	—	—	0.36
Borrowings required	—	—	—	—	36.0	3.0
Ending balance (actual estimated)	42	59.8	64.8	51.5	40.5	40.74

Working Notes

1. **Determination of interest:**
2. **Payment to creditors** (*Amount in thousands of rupees*)

Particulars	*November*	*December*	*January*	*February*	*March*	*April*	*May*	*June*
Sales	200	220	120	100	150	240	200	200
Purchase (75% of sales as 25% is gross margin)	150	165	90	75	112.5	180	150	150
Purchases (one month in advance)	165	90	75	112.5	180	150	150	NA
Payments (two month's time-lag)	—	—	165	90	75	112.5	180	150

P.14.12 Prepare cash budget for April-October from the following information supplied by Shah Agencies Ltd.

Balance sheet as at March 31

Proprietor's capital	Rs 1,00,000	Cash	Rs 20,500
Outstanding liabilities	11,000	Stock in trade	50,500

		Sundry debtors		20,000
		Furniture	Rs 25,000	
		Less: Depreciation	5,000	20,000
	1,11,000			1,11,000

Sales and the expenditure on salaries are expected to be as under:

Months	*Sales*	*Salaries*	*Months*	*Sales*	*Salaries*
April	Rs 30,000	Rs 3,000	August	90,000	4,000
May	52,000	3,500	September	35,000	3,000
June	50,000	3,500	October	25,000	3,000
July	75,000	4,000			

The other expenses per month are: Rent, Rs 1,000, Depreciation, Rs 1,000, Miscellaneous expenses, Rs 500, and Commission, 1 per cent of sales.

Of the total sales, 80 per cent is on credit and 20 per cent for cash; 70 per cent of the credit sales are collected in the first month following sale and the balance in the second month. There are no bad debt losses. Gross margin on sales on an average is 30 per cent. Purchases equal to the next month's sales are made every month and they are paid during the month in which they are made. The firm maintains a minimum cash balance of Rs 10,000. Cash deficiencies are made up by the bank loans which are repaid at the earliest opportunity available and cash in excess of Rs 15,000 is invested in securities (interest on bank loans and securities is to be ignored). Outstanding liabilities remain unchanged. Debtors pertain to credit sales of March. State your assumptions, if any.

Solution

Cash budget (April-October)

Particulars	*April*	*May*	*June*	*July*	*August*	*September*	*October*
(a) Cash inflows							
Cash sales	Rs 6,000	Rs 10,400	Rs 10,000	Rs 15,000	Rs 18,000	Rs 7,000	Rs 5,000
Collection from debtors							
First month following sales (70%)	14,000	16,800	29,120	28,000	42,000	50,400	19,600
Second month following sales (30%)	6,000	6,000	7,200	12,480	12,000	18,000	21,600
Total	26,000	33,200	46,320	55,480	72,000	75,400	46,200
(*Contd.*)							
(b) Cash outflows							
Payment to creditors (*see working notes*)	36,400	35,000	52,500	63,000	24,500	17,500	17,500
Salaries	3,000	3,500	3,500	4,000	4,000	3,000	3,000
Rent	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Miscellaneous expenses	500	500	500	500	500	500	500
Commission (1% of sales)	300	520	500	750	900	350	250
Total	41,200	40,520	58,000	69,250	30,900	22,350	22,250
(c) Surplus/(deficiency) [a – b]	(15,200)	(7,320)	(11,680)	(13,770)	41,100	53,050	23,950
Beginning balance	20,500	10,000	10,000	10,000	10,000	13,700	15,000
Ending balance (deficiency)	5,300	2,680	(1,680)	(3,770)	51,100	66,750	38,950
Borrowing required (minimum cash balance + deficiency – surplus)	4,700	7,320	11,680	13,700	—	—	—
Repayment made	—	—	—	—	37,400	—	—
Investment in securities	—	—	—	—	—	51,750	23,950
Closing balance (actually now estimated)	10,000	10,000	10,000	10,000	13,700	15,000	15,000

Working Notes

Payment to creditors

Particulars	*April*	*May*	*June*	*July*	*August*	*Sept.*	*Oct.*	*Nov.*
Sales (Rs)	Rs 30,000	Rs 52,000	Rs 50,000	Rs 75,000	Rs 90,000	Rs 35,000	Rs 25,000	Rs 25,000 (assumed)
Cost of goods to								

be purchased (70% of next month's sales and paid)	36,400	35,000	52,500	63,000	24,500	17,500	17,500	—

P.14.13 P Company has to make payment of Rs 2 million on 16th April. It has a surplus money today i.e. 15th January and the company has decided to invest in certificate of deposit (CD's) of a leading nationalised bank at 8.00 per cent per annum. What money is required to be invested now? Take year as 365 days.

Solution Amount required to make payment on 16th April Rs 2 million

Let amount invested in Certificates of Deposit for 91 days on 15th January be Rs X

Rate of interest 8 per cent per annum

Based on these facts, the equation is

Rs X = Rs 20,00,000

or 1.0199452 X = Rs 20,00,000

or X = Rs 20,00,000/1.10199452 = Rs 19,60,890

Therefore, the company is advised to invest Rs 19,60,890 on 15th January in Certificate of Deposit for 91 days in order to receive Rs 20,00,000 on 16th April to make payment.

Review Questions

14.17 From the following particulars of a firm prepare a cash budget for the six months: January-June. Also, state if any information is missing.

(A) Balance sheet as at December 31

Liabilities		*Assets*		
Share capital	Rs 10,000	Cash		Rs 16,000
Reserves	90,000	Accounts receivable		10,000
		Inventory		20,000
		Fixed assets	Rs 59,000	
		Less: Depreciation	5,000	54,000
	1,00,000			1,00,000

(B) Sales forecast

January	Rs 20,000	April	Rs 60,000
February	40,000	May	90,000
March	50,000	June	50,000
		July	10,000

(C) Salary expenses

January	Rs 3,000	April	Rs 9,000
February	5,000	May	11,000
March	7,000	June	6,000

(D) Monthly selling and distributive expenses are expected to be 10 per cent of sales. Depreciation charges are 1 per cent per month.

(E) The firm operates on the following terms:

(i) Sales are on a 30-day basis, but payments are not received until the next month.

(ii) All purchases of the firm are in cash.

(iii) The firm purchases enough inventory each month to cover the following month's sales.

(iv) A minimum cash balance of Rs.10,000 is maintained.

(F) Additional information:

New equipment purchased for Rs 5,000 is scheduled for delivery on March 1; payment is to be made at the time of delivery.

14.18 The following information is available in respect of ABC Ltd:

(i) Materials are purchased and received one month before being used and payment is made to suppliers two months after receipt of materials.

(ii) Cash is received from customers three months after finished goods are sold and delivered to them.

(iii) No time-lag applies to payments of wages and expenses.

(iv) The following figures apply to recent and future months:

Month	Materials received	Sales	Wages and expenses
January	Rs 20,000	Rs 30,000	Rs 9,500
February	22,000	33,000	10,000
March	24,000	36,000	10,500
April	26,000	39,000	11,000
May	28,000	42,000	11,500
June	30,000	45,000	12,000
July	32,000	48,000	12,500
August	34,000	51,000	13,000

(v) Cash balance at the beginning of April is Rs 10,000.

(vi) All products are sold immediately after they have been made and that materials used and sums spent on wages and expenses during any particular month relate strictly to the sales made during that month.

Prepare cash flow forecast month by month from April to July.

14.19 A firm is contemplating various actions each of which will have different effects on the average age of inventory, accounts receivable and accounts payable. Which of the following four plans is better if the changes indicated below are expected?

Plan	Change in average age Inventory days	Accounts receivable days	Accounts payable days
A	+30	–20	+35
B	–10	0	–20
C	0	–30	+5
D	–15	+10	+15

14.20 Avon Industries forecasts cash outlays of Rs 18,00,000 for the coming year. To minimise cash balance, the management plans to apply the Baumol model.

The estimated conversion cost of converting marketable securities to cash and *vice versa* is to be Rs 45 per conversion transaction and the annual opportunity cost of holding cash instead of marketable securities is to be 8 per cent.

Required:

(a) Calculate the optimal amount of cash transfer from marketable securities to cash (i.e., optimum conversion size). What will be the average cash balance?

(b) Number of transaction required for the year.

(c) Total cost resulting from the use of optimum conversion size computed in (a).

(d) If the firm makes 12 equal conversions (i.e., one per month), compute (i) total conversion cost, (ii) total opportunity cost and (iii) total cost. Compare and contrast this value in light of results in (c).

14.21 The following facts relate to STC ltd:

ΔConversion cost, Rs 50.

ΔDaily net cash flow variance, Rs 20,00,000.

ΔAnnual opportunity cost, 10 per cent.

Required:

Based on Miller-Orr model,

(i)Return point and upper limit using the current values.

(ii) Simultaneous increase in each of the variable values used in (i) by 50 per cent and recalculate the return point and upper limit.

14.22 The under mentioned facts relate to Popular Industries ltd:

(i) Currently Rs 10,00,000 is maintained in noninterest-earning cash account.

(ii) Conversion costs to transfer marketable securities to cash and *vice versa*, Rs 30 per conversion on an average.

(iii) Variance of daily net cash flows, Rs 15,00,000.

(iv) Marketable securities can earn 9 per cent annually.

Required:

(1) Using the Miller-Orr model, compute the return point and the upper limit.

(2) Determine the additional profit the firm can earn by using the Miller-Orr model instead of

maintaining its current cash balance. The average balance for the model is: Return point $\times$ 4/3.

(3) Should the firm rely on the model or continue to use its current system of maintaining a large cash balance if the firm's variance of daily net cash flows increases to Rs 30,00,000?

14.23 Ram, Arun & Kailash, Chartered Accountants, are partners in a firm 'Renuka Associate'. The revenue of the firm is increasing steadily over the years. For the first 6 months of the current year, the following projections related to profit were made:

Projected profit forecasts for the six months (Amount Rs '000)

Particulars	*April*	*May*	*June*	*July*	*August*	*Sept.*
Receipts:						
Internal/Corporate audit	60	60	60	60	60	60
Taxation	30	45	40	50	40	60
Project consultancy	30	50	30	40	60	40
Total	120	155	130	150	160	160
Expenses:						
Depreciation	10	10	10	10	10	10
Rent	5	5	5	5	5	5
Stipend	15	15	15	15	15	15
Telephone	5	7	8	9	13	15
Office expenses & salaries	35	45	50	35	40	42
Training	5	6	4	10	12	13
Travel & conveyance	10	12	13	14	15	15
Partners & assistants' salaries	20	30	35	35	40	40
Total	105	130	140	133	150	155
Profit	15	25	(10)	17	10	5

The following additional information is significant:

(i) Rent is payable in advance on the last day of the previous quarter.
(ii) Stipend will be paid in the same month.
(iii) Telephone will be paid every two months in arrears. (i.e. April and May will be paid in June).
(iv) Office expenses and salaries will be paid in the following month.
(v) Travel and training will be paid in the same month.
(vi) Partners' and assistants' salaries will be paid in the following month.
(vii) The firm is planning to invest a sum of Rs 50,000 in July for acquiring a computer.
(viii) The firm expects to pay a self-assessment tax of Rs 5,000 and advance tax of Rs 15,000 in August.
(ix) The firm is planning to open a branch and spend a sum of Rs 20,000 in September in this regard.
(x) Internal/corporate audit fees will be collected in the following month. Taxation: 50 per cent in the same month and 50 per cent in the following month. Consultancy charge is normally received after 2 months.
(xi) The firm's cash balance as on July 1 was Rs 25,000.

Prepare a cash budget for each of the 3 months (July, August and September).

Answers

14.17 Borrowing to maintain minimum cash balance: January Rs 29,000; February Rs 39,000; March, Rs 37,000; April Rs 55,000; May Rs 10,000; Repayments June, Rs 69,000.

14.18 Closing balance: April, Rs 7,000; May, Rs 4,500; June, Rs 2,500 and July, Rs 1,000.

14.19 Plans A and C are better than Plans B and D.

14.23 Closing balance: July, Rs 6,000; August, (Rs 8,000, i.e. overdraft); September (Rs 16,000). Overdraft as on September 30, Rs 16,000.