

MANAGEMENT OF WORKING CAPITAL

UNIT – I : MEANING, CONCEPT AND POLICIES OF WORKING CAPITAL

Question 1

A newly formed company has applied to the Commercial Bank for the first time for financing its working capital requirements. The following information is available about the projections for the current year:

Elements of cost:	Per unit (Rs.)
Raw material	40
Direct labour	15
Overhead	<u>30</u>
Total cost	85
Profit	<u>15</u>
Sales	<u>100</u>

Other information:

Raw material in stock : average 4 weeks consumption, Work – in progress (completion stage, 50 per cent), on an average half a month. Finished goods in stock : on an average, one month.

Credit allowed by suppliers is one month.

Credit allowed to debtors is two months.

Average time lag in payment of wages is 1½ weeks and 4 weeks in overhead expenses.

Cash in hand and at bank is desired to be maintained at Rs. 50,000.

All Sales are on credit basis only.

Required:

- Prepare statement showing estimate of working capital needed to finance an activity level of 96,000 units of production. Assume that production is carried on evenly throughout the year, and wages and overhead accrue similarly. For the calculation purpose 4 weeks may be taken as equivalent to a month and 52 weeks in a year.

- (ii) From the above information calculate the maximum permissible bank finance by all the three methods for working capital as per Tandon Committee norms; assume the core current assets constitute 25% of the current assets. (PCC-Nov. 2007)(8 marks)

Answer

Calculation of Working Capital Requirement

(A) Current Assets

	Rs.
(i) Stock of material for 4 weeks $(96,000 \times 40 \times 4/52)$	2,95,385
(ii) Work in progress for $\frac{1}{2}$ month or 2 weeks	
Material $(96,000 \times 40 \times 2/52) .50$	73,846
Labour $(96,000 \times 15 \times 2/52) .50$	27,692
Overhead $(96,000 \times 30 \times 2/52) .50$	<u>55,385</u>
	1,56,923
(iii) Finished stock $(96,000 \times 85 \times 4/52)$	6,27,692
(iv) Debtors for 2 months $(96,000 \times 85 \times 8/52)$	12,55,385
Cash in hand or at bank	50,000
Investment in Current Assets	23,85,385

(B) Current Liabilities

(i) Creditors for one month $(96,000 \times 40 \times 4/52)$	2,95,385
(ii) Average lag in payment of expenses	
Overheads $(96,000 \times 30 \times 4/52)$	2,21,538
Labour $(96,000 \times 15 \times 3/104)$	<u>41,538</u>
Current Liabilities	<u>5,58,461</u>
Net working capital (A – B)	<u>18,26,924</u>

Minimum Permissible Bank Finance as per Tandon Committee

Method I : .75 (Current Assets – Current Liabilities)

$$.75 (23,85,385 - 5,58,461)$$

$$.75 (18,26,924) - 5,58,461 = \text{Rs. } 13,70,193$$

Method II : .75 $\times$ Current Assets – Current Liabilities

$$.75 \times 23,85,385 - 5,58,461$$

$$17,89,039 - 5,58,461 = \text{Rs. } 12,30,578$$

Method III: .75 (Current Assets – CCA) – Current Liabilities

$$\begin{aligned}
 &.75 (23,85,385 - 5,96,346) - 5,58,461 \\
 &.75 (17,89,039) - 5,58,461 \\
 &13,41,779 - 5,58,461 = \text{Rs. } 7,83,318
 \end{aligned}$$

Question 2

MN Ltd. is commencing a new project for manufacture of electric toys. The following cost information has been ascertained for annual production of 60,000 units at full capacity:

	Amount per unit	
	Rs.	
Raw materials		20
Direct labour		15
Manufacturing overheads:		
	Rs.	
Variable	15	
Fixed	<u>10</u>	25
Selling and Distribution overheads:		
	Rs.	
Variable	3	
Fixed	<u>1</u>	<u>4</u>
Total cost		64
Profit		<u>16</u>
Selling price		<u>80</u>

In the first year of operations expected production and sales are 40,000 units and 35,000 units respectively. To assess the need of working capital, the following additional information is available:

- (i) Stock of Raw materials.....3 months consumption.
- (ii) Credit allowable for debtors.....1½ months.
- (iii) Credit allowable by creditors.....4 months.
- (iv) Lag in payment of wages.....1 month.
- (v) Lag in payment of overheads.....½ month.

(vi) Cash in hand and Bank is expected to be Rs. 60,000.

(vii) Provision for contingencies is required @ 10% of working capital requirement including that provision.

You are required to prepare a projected statement of working capital requirement for the first year of operations. Debtors are taken at cost. (PCC-Nov. 2008)(9 marks)

Answer

Statement Showing Cost and Sales for the First Year

Annual Production Capacity	60,000 units
Production	40,000 units
Sales	35,000 units

Particulars	Rs.
Sales Revenue (Rs. 80 × 35,000)	28,00,000
Cost of Production:	
Materials @ Rs. 20 per unit	8,00,000
Direct Labour @ Rs. 15 per unit	6,00,000
Manufacturing Overheads	
Variable @ Rs. 15 per unit	6,00,000
Fixed (based on production capacity 60,000 units × Rs. 10)	<u>6,00,000</u>
Cost of Production	26,00,000
Less: Closing Stock (40,000 – 35,000 = 5,000 units)	
$\left(\text{Rs. } \frac{26,00,000}{40,000} \times 5,000 \text{ units} \right)$	<u>3,25,000</u>
Cost of Goods Sold	22,75,000
Add: Selling & Distribution Overheads	
Variable @ Rs. 3 × 35,000 units = 1,05,000	
Fixed (Rs. 1 × 60,000 units) = 60,000	<u>1,65,000</u>
Cost of Sales	<u>24,40,000</u>
Profit	<u><u>3,60,000</u></u>

Statement Showing Working Capital Requirement

A. Current Assets	<i>Rs.</i>
Stock of Raw Materials (Rs. 8,00,000 × 3/12)	2,00,000
Stock of Finished Goods	3,25,000
Debtors at Cost (Rs. 24,40,000 × 3/24)	3,05,000
Cash and Bank	<u>60,000</u>
Total (A)	<u>8,90,000</u>
B. Current Liabilities	
Creditors for Materials (Rs. 10,00,000 × 4/12)	3,33,333
Creditors for Expenses (Rs. 13,65,000 × 1/24)	56,875
Outstanding Wages (Rs. 6,00,000 × 1/12)	<u>50,000</u>
Total (B)	<u>4,40,208</u>
Working Capital Requirement before Contingencies (A – B)	4,49,792
Add: Provision for Contingencies (Rs. 4,49,792 × 1/9)	<u>49,977</u>
Estimated Working Capital Requirement	<u>4,99,769</u>
Workings Notes:	
<i>Purchase of Raw Material during the first year</i>	<i>Rs.</i>
Raw Material consumed during the year	8,00,000
Add: Closing Stock of Raw Materials (3 months consumption)	<u>2,00,000</u>
	10,00,000
Less: Opening Stock of Raw Material	<u>Nil</u>
Purchases during the year	<u>10,00,000</u>

UNIT – II : TREASURY AND CASH MANAGEMENT

Question 1

Explain briefly the functions of Treasury Department. (PCC-May 2008 & June 2009)(3 marks)

Answer

The functions of treasury department management is to ensure proper usage, storage and risk management of liquid funds so as to ensure that the organisation is able to meet its obligations, collect its receivables and also maximize the return on its investments. Towards this end the treasury function may be divided into the following:

- (i) **Cash Management:** The efficient collection and payment of cash both inside the organization and to third parties is the function of treasury department. Treasury normally manages surplus funds in an investment portfolio.
- (ii) **Currency Management:** The treasury department manages the foreign currency risk exposure of the company. It advises on the currency to be used when invoicing overseas sales. It also manages any net exchange exposures in accordance with the company policy.
- (iii) **Fund Management:** Treasury department is responsible for planning and sourcing the company's short, medium and long-term cash needs. It also participates in the decision on capital structure and forecasts future interest and foreign currency rates.
- (iv) **Banking:** Since short-term finance can come in the form of bank loans or through the sale of commercial paper in the money market, therefore, treasury department carries out negotiations with bankers and acts as the initial point of contact with them.
- (v) **Corporate Finance:** Treasury department is involved with both acquisition and disinvestment activities within the group. In addition, it is often responsible for investor relations.

Question 2

A firm maintains a separate account for cash disbursement. Total disbursements are Rs. 2,62,500 per month. Administrative and transaction cost of transferring cash to disbursement account is Rs. 25 per transfer. Marketable securities yield is 7.5% per annum.

Determine the optimum cash balance according to William J Baumol model.

(PCC-June 2009)(3 marks)

Answer

Determination of Optimal Cash Balance according to William J. Baumol Model

The formula for determining optimum cash balance is:

$$C = \sqrt{\frac{2U \times P}{S}}$$
$$C = \sqrt{\frac{2 \times 2,62,500 \times 12 \times 25}{0.075}}$$
$$= \sqrt{\frac{15,75,00,000}{0.075}}$$
$$= \sqrt{2,10,00,00,000}$$

Optimum Cash Balance, C, = Rs. 45,826

UNIT – III : MANAGEMENT OF INVENTORY

Question 1

The demand for a certain product is random. It has been estimated that the monthly demand of the product has a normal distribution with a mean of 390 units. The unit price of product is Rs. 25. Ordering cost is Rs. 40 per order and inventory carrying cost is estimated to be 35 per cent per year.

Required:

Calculate Economic Order Quantity (EOQ).

(PCC-Nov. 2007)(2 marks)

Answer

Calculation of Economic Order Quantity (EOQ)

The mean of monthly demand = 390 units, Annual demand (A) = $390 \times 12 = 4,680$ units

Ordering cost (O) = Rs. 40 per order, Cost per unit = Rs. 25.

Inventory carrying cost of one unit (CC) = $\text{Rs. } 25 \times 35\% = \text{Rs. } 8.75$

$$\text{EOQ} = \sqrt{\frac{2AO}{CC}}$$

$$= \sqrt{2 \times 4,680 \times \frac{40}{8.75}} = 206.85 \text{ or } 207 \text{ units}$$

UNIT – IV : MANAGEMENT OF RECEIVABLES

Question 1

The turnover of PQR Ltd. is Rs. 120 lakhs of which 75 per cent is on credit. The variable cost ratio is 80 per cent. The credit terms are 2/10, net 30. On the current level of sales, the bad debts are 1 per cent. The company spends Rs. 1,20,000 per annum on administering its credit sales. The cost includes salaries of staff who handle credit checking, collection etc. These are avoidable costs. The past experience indicates that 60 per cent of the customers avail of the cash discount, the remaining customers pay on an average 60 days after the date of sale.

The Book debts (receivable) of the company are presently being financed in the ratio of 1 : 1 by a mix of bank borrowings and owned funds which cost per annum 15 per cent and 14 per cent respectively.

A factoring firm has offered to buy the firm's receivables. The main elements of such deal structured by the factor are:

- (i) Factor reserve, 12 per cent
- (ii) Guaranteed payment, 25 days
- (iii) Interest charges, 15 per cent, and
- (iv) Commission 4 per cent of the value of receivables.

Assume 360 days in a year.

What advise would you give to PQR Ltd. - whether to continue with the in house management of receivables or accept the factoring firm's offer? (PCC-May 2007)(8 marks)

Answer

In-house Decision

	Rs.
Cash discount (Rs. 90 lakhs $\times$.60 $\times$.02)	1,08,000
Bad debts losses (90,00,000 $\times$.01)	90,000
Administration cost	1,20,000
Cost of funds in receivables*	<u>1,08,750</u>
	<u>4,26,750</u>

*Average collection period $(10 \times .6) + (60 \text{ days} \times .40) = 30 \text{ days}$

$$\text{Average investments in debtors} = \frac{90}{12} = 7.5 \text{ lakhs}$$

Cost of Bank funds $\left(\text{Rs. } 7.5 \times \frac{1}{2} \times .15 \right)$	56,250
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Cost of Owned funds $\left(\text{Rs. } 7.5 \times \frac{1}{2} \times .14 \right)$	<u>52,500</u>
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1,08,750

Offer Alternative

Factoring commission (Rs. 90 lakhs $\times$.04)	3,60,000
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Interest charges $.88(90 \text{ lakhs} - 3,60,000) = 76,03,200 \times .15 \times \frac{25}{360}$	79,200
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Cost of owned funds invested in receivables $(90,00,000 - 76,03,200) \times .14 \times \frac{25}{360}$	<u>13,580</u>
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4,52,780

Decision: PQR should not go for the factoring alternative as the cost of factoring is more.

Cost of In-house Decision	4,26,750
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Cost of Factoring Firm	<u>4,52,780</u>
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Net loss	(26,030)
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Question 2

A firm has a total sales of Rs. 12,00,000 and its average collection period is 90 days. The past experience indicates that bad debt losses are 1.5% on sales. The expenditure incurred by the firm in administering receivable collection efforts are Rs. 50,000. A factor is prepared to buy the firm's receivables by charging 2% commission. The factor will pay advance on receivables to the firm at an interest rate of 16% p.a. after withholding 10% as reserve. Calculate effective cost of factoring to the firm. Assume 360 days in a year. (PCC-June 2009)(3 marks)

Answer

Computation of Effective Cost of Factoring

Average level of Receivables = $12,00,000 \times 90/360$	3,00,000
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Factoring Commission = $3,00,000 \times 2/100$	6,000
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Factoring Reserve	= 3,00,000 × 10/100	30,000
Amount Available for Advance	= Rs. 3,00,000-(6,000+30,000)	2,64,000
Factor will deduct his interest @ 16% :-		
Interest =	$\frac{\text{Rs. } 2,64,000 \times 16 \times 90}{360 \times 100}$	= Rs. 10,560

Advance to be paid = Rs. 2,64,000 – Rs. 10,560 = Rs. 2,53,440

Annual Cost of Factoring to the Firm:	Rs.
Factoring Commission (Rs. 6,000 × 360/90)	24,000
Interest Charges (Rs. 10,560 × 360/90)	<u>42,240</u>
Total	<u>66,240</u>

Firm's Savings on taking Factoring Service:	Rs.
Cost of Administration Saved	50,000
Cost of Bad Debts (Rs. 12,00,000 × 1.5/100) avoided	<u>18,000</u>
Total	<u>68,000</u>

Net Benefit to the Firm (Rs. 68,000 – Rs. 66,240)	<u>1,760</u>
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Effective Cost of Factoring = $\frac{\text{Rs. } 66,240 \times 100}{2,53,440}$	26.136%
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Effective Cost of Factoring = 26.136%

UNIT – V : MANAGEMENT OF PAYABLES (CREDITORS)

No questions asked from this unit.

UNIT – VI: FINANCING OF WORKING CAPITAL

No questions asked from this unit.