

7

Management of Working Capital

BASIC CONCEPTS AND FORMULAE

Meaning Concept And Policies Of Working Capital	
Meaning and Concept of Working Capital	<p>In accounting term working capital is the difference between the current assets and current liabilities.</p> <p>Working Capital = Current Assets – Current Liabilities</p> <p>From the value point of view, Working Capital can be defined as:</p> <p>Gross Working Capital: It refers to the firm's investment in current assets.</p> <p>Net Working Capital: It refers to the difference between current assets and current liabilities.</p> <p>From the point of view of time, working capital can be divided into:</p> <p>Permanent Working Capital: It is that minimum level of investment in the current assets that is carried by the business at all times to carry out minimum level of its activities.</p> <p>Temporary Working Capital: It refers to that part of total working capital, which is required by a business over and above permanent working capital.</p>
Determinants of Working Capital	<ul style="list-style-type: none"> • Nature of business • Market conditions • Demand conditions • Operating efficiency • Credit policy • Level of Current Assets
Working Capital Cycle	<p>Working Capital Cycle indicates the length of time between a company's paying for materials, entering into stock and receiving the cash from sales of finished goods. It can be determined by adding the number of days required for each stage in the cycle.</p>

7.2 Financial Management

Computation of Operating Cycle	<p>Operating Cycle = R + W + F + D – C</p> <p>Where,</p> <p>R = Raw material storage period</p> <p>W = Work-in-progress holding period</p> <p>F = Finished goods storage period</p> <p>D = Receivable (Debtors) collection period.</p> <p>C = Credit period availed.</p>
Raw Material storage period	$= \frac{\text{Average stock of raw material}}{\text{Average Cost of Raw Material Consumption per day}}$
Work-in-Progress holding period	$= \frac{\text{Average Work - in - progress inventory}}{\text{Average Cost of Production per day}}$
Finished Goods storage period	$= \frac{\text{Average stock of finished goods}}{\text{Average Cost of Goods Sold per day}}$
Receivables (Debtors) collection period	$= \frac{\text{Average Receivables}}{\text{Average Credit Sales per day}}$
Credit period allowed by suppliers (Creditors)	$= \frac{\text{Average Payables}}{\text{Average Credit Purchases per day}}$
Estimation of Raw Materials Inventory	$\frac{\text{Estimated Production (units)}}{12 \text{ months} / 365 \text{ days}^*} \times \text{Cost per unit} \times \text{Avg. storage period}$
Estimation of Work-in-Progress Inventory	$\frac{\text{Estimated Production (units)}}{12 \text{ months} / 365 \text{ days}^*} \times \text{Estimated WIP cost per unit} \times \text{Average W-I-P holding period}$
Estimation of Finished Goods	$\frac{\text{Estimated Production (units)}}{12 \text{ months} / 365 \text{ days}^*} \times \text{Estimated Cost of production per unit} \times \text{Average finished goods storage period}$
Estimation of Receivables (Debtors)	$\frac{\text{Estimated credit sales unit}}{12 \text{ months} / 365 \text{ days}^*} \times \text{Cost of sales (excluding depreciation) per unit} \times \text{Average receivable collection period}$

Estimation of Trade Payables	$\frac{\text{Estimated credit purchase}}{12 \text{ months} / 365 \text{ days}^*} \times \text{Credit period allowed by suppliers}$
Estimation of Direct Wages	$\frac{\text{Estimated labour hours} \times \text{wages rate per hour}}{12 \text{ months} / 365 \text{ days}^*} \times \text{Average time lag in payment of wages}$
Estimation of Overheads (other than depreciation and amortization)	$\frac{\text{Estimated Overheads}}{12 \text{ months} / 365 \text{ days}^*} \times \text{Average time lag in payment of overheads}$ No of days in a year may be taken as 360 or 365 days.
Treasury and Cash Management	
Treasury Management	Treasury management is defined as ‘the corporate handling of all financial matters, the generation of external and internal funds for business, the management of currencies and cash flows and the complex, strategies, policies and procedures of corporate finance’.
Management of Cash	It involves efficient cash collection process and managing payment of cash both inside the organisation and to third parties. The main objectives of cash management for a business are:- i. Provide adequate cash to each of its units; ii. No funds are blocked in idle cash; and The surplus cash (if any) should be invested in order to maximize returns for the business.
Cash Budget	Cash Budget is the most significant device to plan for and control cash receipts and payments. This represents cash requirements of business during the budget period.
Floats with reference to Management of Cash	Four kinds of float with reference to management of cash are: (i) Billing float (ii) Mail float (iii) Cheque processing float (iv) Bank processing float
Cash Management Models	William J. Baumol’s Economic Order Quantity Model, (1952): According to this model, optimum cash level is that level of cash where the carrying costs and transactions costs are the minimum. The formula for determining optimum cash balance is:

	$C = \sqrt{\frac{2U \times P}{S}}$
	<p>Miller-Orr Cash Management Model (1966): According to this model the net cash flow is completely stochastic. When changes in cash balance occur randomly the application of control theory serves a useful purpose. The Miller-Orr model is one of such control limit models.</p>
Management of Marketable Securities	<p>Management of marketable securities is an integral part of investment of cash as this may serve both the purposes of liquidity and cash, provided choice of investment is made correctly. As the working capital needs are fluctuating, it is possible to park excess funds in some short term securities, which can be liquidated when need for cash is felt. The selection of securities should be guided by three principles.</p> <ul style="list-style-type: none"> • Safety: Return and risks go hand in hand. As the objective in this investment is ensuring liquidity, minimum risk is the criterion of selection. • Maturity: Matching of maturity and forecasted cash needs is essential. Prices of long term securities fluctuate more with changes in interest rates and are therefore, more risky. • Marketability: It refers to the convenience, speed and cost at which a security can be converted into cash. If the security can be sold quickly without loss of time and price it is highly liquid or marketable.
Management of Inventory	
Inventory Management	<p>Inventory management covers a large number of problems including fixation of minimum and maximum levels, determining the size of inventory to be carried, deciding about the issues, receipts and inspection procedures, determining the economic order quantity, proper storage facilities, keeping check over obsolescence and ensuring control over movement of inventories.</p>
Management of Receivables (Debtors)	
Management of Receivables	<p>Large amounts are tied up in trade receivables, there are chances of bad debts and there will be cost of collection of receivables. On the contrary, if the investment in receivables is low, the sales may be restricted, since the competitors may offer more liberal terms. Therefore, management of receivables is an important issue and requires proper policies and their implementation.</p>

Aspects of Receivable Management	<p>There are basically three aspects of management of receivables:</p> <p>(i) Credit policy: The credit policy is to be determined. It involves a trade off between the profits on additional sales that arise due to credit being extended on the one hand and the cost of carrying those receivables and bad debt losses on the other. This seeks to decide credit period, cash discount and other relevant matters.</p> <p>(ii) Credit Analysis: This requires the finance manager to determine as to how risky it is to advance credit to a particular party.</p> <p>(iii) Control of Receivables: This requires finance manager to follow up debtors and decide about a suitable credit collection policy. It involves both laying down of credit policies and execution of such policies.</p>
Important Sources of Financing of Receivables	<p>(i) Pledging: This refers to the use of a firm's receivable to secure a short term loan.</p> <p>(ii) Factoring: In factoring, accounts receivables are generally sold to a financial institution (a subsidiary of commercial bank-called "Factor"), who charges commission and bears the credit risks associated with the accounts receivables purchased by it.</p>
Management of Payables (Creditors)	
Management of Payables	<ul style="list-style-type: none"> • Management of Payables involves management of creditors and suppliers. • Trade creditor is a spontaneous source of finance in the sense that it arises from ordinary business transaction. But it is also important to look after your creditors - slow payment by you may create ill-feeling and your supplies could be disrupted and also create a bad image for your company. • Creditors are a vital part of effective cash management and should be managed carefully to enhance the cash position.
Financing of Working Capital	
Financing of Working Capital	<ul style="list-style-type: none"> • It is advisable that the finance manager bifurcates the working capital requirements between permanent working capital and temporary working capital. • The permanent working capital is always needed irrespective of sales fluctuations, hence should be financed by the long-term sources such as debt and equity. On the contrary, temporary working capital may be financed by the short-term sources of finance.

	<ul style="list-style-type: none">• Broadly speaking, the working capital finance may be classified between the two categories:<ul style="list-style-type: none">(i) Spontaneous Sources: Spontaneous sources of finance are those which naturally arise in the course of business operations. Trade credit, credit from employees, credit from suppliers of services, etc. are some of the examples which may be quoted in this respect.(ii) Negotiable Sources: On the other hand the negotiated sources, as the name implies, are those which have to be specifically negotiated with lenders say, commercial banks, financial institutions, general public etc.
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UNIT – I : MEANING, CONCEPT AND POLICIES OF WORKING CAPITAL

SECTION-A

Question 1

Discuss the factors to be taken into consideration while determining the requirement of working capital.

Answer

Factors to be taken into consideration while determining the requirement of working capital:

- | | |
|------------------------------|-----------------------------|
| (i) Production Policies | (ii) Nature of the business |
| (iii) Credit policy | (iv) Inventory policy |
| (v) Abnormal factors | (vi) Market conditions |
| (vii) Conditions of supply | (viii) Business cycle |
| (ix) Growth and expansion | (x) Level of taxes |
| (xi) Dividend policy | (xii) Price level changes |
| (xiii) Operating efficiency. | |

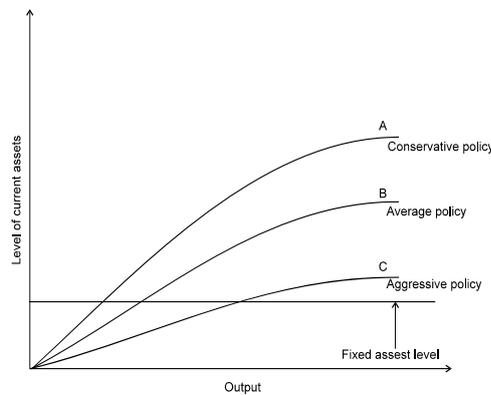
Question 2

Discuss the liquidity vs. profitability issue in management of working capital.

Answer

Liquidity versus Profitability Issue in Management of Working Capital

Working capital management entails the control and monitoring of all components of working capital i.e. cash, marketable securities, debtors, creditors etc. Finance manager has to pay particular attention to the levels of current assets and their financing. To decide the level of financing of current assets, the risk return trade off must be taken into account. The level of current assets can be measured by creating a relationship between current assets and fixed assets. A firm may follow a conservative, aggressive or moderate policy.



A conservative policy means lower return and risk while an aggressive policy produces higher return and risk. The two important aims of the working capital management are profitability and solvency. A liquid firm has less risk of insolvency i.e. it will hardly experience a cash shortage or a stock out situation. However, there is a cost associated with maintaining a sound liquidity position. So, to have a higher profitability the firm may have to sacrifice solvency and maintain a relatively low level of current assets.

Question 3

Discuss the estimation of working capital need based on operating cycle process.

Answer

Estimation of Working Capital Need based on Operating Cycle

One of the methods for forecasting working capital requirement is based on the concept of operating cycle. The determination of operating capital cycle helps in the forecast, control and management of working capital. The length of operating cycle is the indicator of performance of management. The net operating cycle represents the time interval for which the firm has to negotiate for Working Capital from its Bankers. It enables to determine accurately the amount of working capital needed for the continuous operation of business activities. The duration of working capital cycle may vary depending on the nature of the business.

7.8 Financial Management

In the form of an equation, the operating cycle process can be expressed as follows:

$$\text{Operating Cycle} = R + W + F + D - C$$

Where,

- R = Raw material storage period.
- W = Work-in-progress holding period.
- F = Finished goods storage period.
- D = Debtors collection period.
- C = Credit period availed.

SECTION-B

Question 1

XYZ Co. Ltd. is a pipe manufacturing company. Its production cycle indicates that materials are introduced in the beginning of the production cycle; wages and overhead accrue evenly throughout the period of the cycle. Wages are paid in the next month following the month of accrual. Work in process includes full units of raw materials used in the beginning of the production process and 50% of wages and overheads are supposed to be conversion costs. Details of production process and the components of working capital are as follows:

<i>Production of pipes</i>	<i>12,00,000 units</i>
<i>Duration of the production cycle</i>	<i>One month</i>
<i>Raw materials inventory held</i>	<i>One month consumption</i>
<i>Finished goods inventory held for</i>	<i>Two months</i>
<i>Credit allowed by creditors</i>	<i>One month</i>
<i>Credit given to debtors</i>	<i>Two months</i>
<i>Cost price of raw materials</i>	<i>₹ 60 per unit</i>
<i>Direct wages</i>	<i>₹ 10 per unit</i>
<i>Overheads</i>	<i>₹ 20 per unit</i>
<i>Selling price of finished pipes</i>	<i>₹ 100 per unit</i>

You are required to calculate the amount of working capital required for the company.

Answer

	(Amount in ₹)	(Amount in ₹)
A. Current Assets		
(i) Inventories:		
- Raw material inventory $\left(\frac{12,00,000 \text{ units} \times ₹60}{12 \text{ months}} \times 1 \text{ month} \right)$		60,00,000
- Work in Progress:		
Raw material (added in the beginning) $\left(\frac{12,00,000 \text{ units} \times ₹60}{12 \text{ months}} \times 1 \text{ month} \right)$	60,00,000	
Wages $\left(\frac{12,00,000 \text{ units} \times ₹10}{12 \text{ months}} \times 1 \text{ month} \right) \times 50\%$	5,00,000	
Overheads $\left(\frac{12,00,000 \text{ units} \times ₹20}{12 \text{ months}} \times 1 \text{ month} \right) \times 50\%$	10,00,000	75,00,000
- Finished goods (inventory held for 2 months) $\left(\frac{12,00,000 \text{ units} \times ₹90}{12 \text{ months}} \times 2 \text{ months} \right)$		1,80,00,000
(ii) Debtors (for 2 months) $\left(\frac{12,00,000 \text{ units} \times ₹90}{12 \text{ months}} \times 2 \text{ months} \right)$		1,80,00,000
Total Current assets		4,95,00,000
B. Current Liabilities		
(i) Creditors for Raw material (1 month) $\left(\frac{12,00,000 \text{ units} \times ₹60}{12 \text{ months}} \times 1 \text{ month} \right)$		60,00,000
(ii) Creditors for wages $\left(\frac{12,00,000 \text{ units} \times ₹10}{12 \text{ months}} \times 1 \text{ month} \right)$		10,00,000
Total current liabilities		70,00,000
Net working capital (A – B)		4,25,00,000

Question 2

A proforma cost sheet of a company provides the following particulars:

	Amount per unit(₹)
Raw materials cost	100.00
Direct labour cost	37.50
Overheads cost	75.00
Total cost	212.50
Profit	37.50
Selling Price	250.00

The Company keeps raw material in stock, on an average for one month; work-in-progress, on an average for one week; and finished goods in stock, on an average for two weeks.

The credit allowed by suppliers is three weeks and company allows four weeks credit to its debtors. The lag in payment of wages is one week and lag in payment of overhead expenses is two weeks.

The Company sells one-fifth of the output against cash and maintains cash-in-hand and at bank put together at ₹37,500.

Required:

Prepare a statement showing estimate of Working Capital needed to finance an activity level of 1,30,000 units of production. Assume that production is carried on evenly throughout the year, and wages and overheads accrue similarly. Work-in-progress stock is 80% complete in all respects.

Answer

Statement showing Estimate of Working Capital Needs

	(Amount in ₹)	(Amount in ₹)
A. Current Assets		
(i) Inventories:		
Raw material (1 month or 4 weeks) $\left(\frac{1,30,000 \text{ units} \times ₹100}{52 \text{ weeks}} \times 4 \text{ weeks} \right)$	10,00,000	
WIP Inventory (1 week) $\left(\frac{1,30,000 \text{ units} \times ₹212.50}{52 \text{ weeks}} \times 1 \text{ week} \right) \times 0.8$	4,25,000	

Finished goods inventory (2 weeks) $\left(\frac{1,30,000 \text{ units} \times ₹212.50}{52 \text{ weeks}} \times 2 \text{ weeks} \right)$	10,62,500	24,87,500
(ii) Receivables (Debtors) (4 weeks) $\left(\frac{1,30,000 \text{ units} \times ₹212.50}{52 \text{ weeks}} \times 4 \text{ weeks} \right) \times \frac{4}{5}$		17,00,000
(iii) Cash and bank balance		37,500
Total Current Assets		42,25,000
B. Current Liabilities:		
(i) Payables (Creditors) for materials (3 weeks) $\left(\frac{1,30,000 \text{ units} \times ₹100}{52 \text{ weeks}} \times 3 \text{ weeks} \right)$		7,50,000
(ii) Outstanding wages (1 week) $\left(\frac{1,30,000 \text{ units} \times ₹37.50}{52 \text{ weeks}} \times 1 \text{ week} \right)$		93,750
(iii) Outstanding overheads (2 weeks) $\left(\frac{1,30,000 \text{ units} \times ₹75}{52 \text{ weeks}} \times 2 \text{ weeks} \right)$		3,75,000
Total Current Liabilities		12,18,750
Net Working Capital Needs (A – B)		30,06,250

Question 3

A proforma cost sheet of a Company provides the following data:

	Amount (₹)
<i>Raw material cost per unit</i>	<i>117.00</i>
<i>Direct Labour cost per unit</i>	<i>49.00</i>
<i>Factory overheads cost per unit</i> <i>(includes depreciation of ₹ 18 per unit at budgeted level of activity)</i>	<i>98.00</i>
<i>Total cost per unit</i>	<i>264.00</i>
<i>Profit</i>	<i>36.00</i>
<i>Selling price per unit</i>	<i>300.00</i>

7.12 Financial Management

Following additional information is available:

Average raw material in stock	:	4 weeks
Average work-in-process stock	:	2 weeks
(% completion with respect to		
Materials	:	80%
Labour and Overheads	:	60%)
Finished goods in stock	:	3 weeks
Credit period allowed to debtors	:	6 weeks
Credit period availed from suppliers	:	8 weeks
Time lag in payment of wages	:	1 week
Time lag in payment of overheads	:	2 weeks

The company sells one-fifth of the output against cash and maintains cash balance of ₹ 2,50,000.

Required:

Prepare a statement showing estimate of working capital needed to finance a budgeted activity level of 78,000 units of production. You may assume that production is carried on evenly throughout the year and wages and overheads accrue similarly.

Answer

Estimation of Working Capital Needs

	(Amount in ₹)	(Amount in ₹)
A. Current Assets		
(i) Inventories:		
Raw material (4 weeks)		
$\left(\frac{78,000 \text{ units} \times ₹117}{52 \text{ weeks}} \times 4 \text{ weeks} \right)$	7,02,000	
WIP Inventory (2 weeks)		
- Material $\left(\frac{78,000 \text{ units} \times ₹117}{52 \text{ weeks}} \times 2 \text{ weeks} \right) \times 0.80$	2,80,800	
- Labour and Overheads (other than depreciation)	5,13,000	

$\left(\frac{78,000 \text{ units} \times ₹129}{52 \text{ weeks}} \times 2 \text{ weeks} \right) \times 0.60$		
Finished goods (3 weeks) $\left(\frac{78,000 \text{ units} \times ₹246}{52 \text{ weeks}} \times 3 \text{ weeks} \right)$	11,07,000	26,02,800
(ii) Receivables (Debtors) (6 weeks) $\left(\frac{78,000 \text{ units} \times ₹246}{52 \text{ weeks}} \times 6 \text{ weeks} \right) \times \frac{4}{5^{\text{th}}}$		17,71,200
(iii) Cash and bank balance		2,50,000
Total Current Assets		43,43,200
B. Current Liabilities:		
(i) Payables (Creditors) for materials (8 weeks) $\left(\frac{78,000 \text{ units} \times ₹117}{52 \text{ weeks}} \times 8 \text{ weeks} \right)$		14,04,000
(ii) Outstanding wages (1 week) $\left(\frac{78,000 \text{ units} \times ₹49}{52 \text{ weeks}} \times 1 \text{ week} \right)$		73,500
(iii) Outstanding overheads (2 weeks) $\left(\frac{78,000 \text{ units} \times ₹80}{52 \text{ weeks}} \times 2 \text{ weeks} \right)$		2,40,000
Total Current Liabilities		17,17,500
Net Working Capital Needs (A – B)		26,25,700

Question 4

MNO Ltd. has furnished the following cost data relating to the year ending of 31st March, 20X8.

	₹ (in Lakhs)
<i>Sales</i>	450.00
<i>Material consumed</i>	150.00
<i>Direct wages</i>	30.00
<i>Factory overheads (100% variable)</i>	60.00
<i>Office and Administrative overheads (100% variable)</i>	60.00
<i>Selling overheads</i>	50.00

7.14 Financial Management

The company wants to make a forecast of working capital needed for the next year and anticipates that:

- Sales will go up by 100%,
- Selling overheads will be ₹ 150 lakhs,
- Stock holdings for the next year will be
 - Raw material for two and half months,
 - Work-in-progress for one month,
 - Finished goods for half month and
 - Book debts for one and half months,
 - Lags in payment will be of 3 months for suppliers,
 - 1 month for wages and half month for factory,
 - Office and Administrative and Selling overheads.

You are required to prepare statement showing working capital requirements for next year.

Answer

Working:

Statement showing the projected Cost and Profitability for the year ending on 31-3-20X9

	Year ending 31/3/20X8 (₹ in lakhs)	Year ending 31/3/20X9 (₹ in lakhs)
A. Sales	450.00	900.00
Direct Materials Consumed	150.00	300.00
Direct Wages	30.00	60.00
Prime Cost	180.00	360.00
Add: Factory overheads	60.00	120.00
Works cost	240.00	480.00
Add: Office & Administrative overheads	60.00	120.00
Cost of Production	300.00	600.00
Less: Closing stock of finished goods (₹ 600 × 0.5/12)	--	(25.00)
Add: Selling overheads	50.00	150.00
B. Total Cost	350.00	725.00
Profit (A – B)	100.00	150.00

Statement showing Working Capital Requirements of MNO Ltd. for the year 31-3-20X9

	(₹ in lakhs)	(₹ in lakhs)
A. Current Assets		
(i) Inventories:		
Raw material (2.5 months) $\left(\frac{₹150 \times 2}{12 \text{ months}} \times 2.5 \text{ months} \right)$	62.50	
WIP Inventory (1 months)		
- Material $\left(\frac{₹150 \times 2}{12 \text{ months}} \times 1 \text{ month} \right)$	25.00	
- Labour and Overheads $\left(\frac{₹(30 + 60) \times 2}{12 \text{ months}} \times 1 \text{ month} \right) \times 0.50$	7.50	
Finished goods (0.5 months) $\left(\frac{₹(30 + 60 + 60) \times 2}{12 \text{ months}} \times 0.5 \text{ month} \right)$	25.00	120.00
(ii) Receivables (Debtors) (1.5 months) $\left(\frac{₹725}{12 \text{ months}} \times 1.5 \text{ months} \right)$		90.62
Total Current Assets		210.62
B. Current Liabilities:		
(i) Payables (Creditors) for materials (3 months) $\left(\frac{₹362.50}{12 \text{ months}} \times 3 \text{ months} \right)$		90.62
(ii) Outstanding wages (1 month) $\left(\frac{₹30 \times 2}{12 \text{ months}} \times 1 \text{ month} \right)$		5.00
(iii) Outstanding overheads (0.5 month) $\left(\frac{₹(60 + 60) \times 2 + ₹150}{12 \text{ months}} \times 0.5 \text{ month} \right)$		16.25
Total Current Liabilities		111.87
Net Working Capital Needs (A – B)		98.75

7.16 Financial Management

Working Note:

Value of raw material purchased

	(₹ in lakhs)
Materials consumed	300.00
Add: Closing value of raw material inventory	62.50
Less: Opening value of raw material inventory	--
Value of materials purchased	362.50

Assumptions:

- (i) There is no opening and closing stock of raw materials in year 20X8, hence, no opening stock in 20X9.
- (ii) The value of opening and closing WIP in 20X8 is same and there is no change in volume of WIP due to increase in sales in 20X9.
- (iii) WIP inventory is 100% complete in respect of material and 50% in respect of labour and overheads.
- (iv) Office and Administrative overheads are related with the production process.
- (v) There is no opening and closing stock of Finished goods in year 20X8, hence, no opening stock in 20X9.

Question 5

Following information is forecasted by the CS Limited for the year ending 31st March, 20X6:

	Balance as at 1 st April, 20X5 (₹)	Balance as at 31 st March, 20X6 (₹)
Raw Material	45,000	65,356
Work-in-progress	35,000	51,300
Finished goods	60,181	70,175
Receivables	1,12,123	1,35,000
Payables	50,079	70,469
Annual purchases of raw material (all credit)		4,00,000
Annual cost of production		7,50,000
Annual cost of goods sold		9,15,000
Annual operating cost		9,50,000
Annual sales (all credit)		11,00,000

You may take one year as equal to 365 days.

You are required to calculate:

- (i) Net operating cycle period.
- (ii) Number of operating cycles in the year.
- (iii) Amount of working capital requirement.

Answer

Working Notes:

1. Raw Material Storage Period (R)

$$\begin{aligned}
 &= \frac{\text{Average Stock of Raw Material}}{\text{Annual Consumption of Raw Material}} \times 365 \\
 &= \frac{\frac{\text{₹ 45,000} + \text{₹ 65,356}}{2}}{\text{₹ 3,79,644}} \times 365 = 53 \text{ days.}
 \end{aligned}$$

$$\begin{aligned}
 \text{Annual Consumption of Raw Material} &= \text{Opening Stock} + \text{Purchases} - \text{Closing Stock} \\
 &= \text{₹ 45,000} + \text{₹ 4,00,000} - \text{₹ 65,356} \\
 &= \text{₹ 3,79,644}
 \end{aligned}$$

2. Work - in - Progress (WIP) Conversion Period (W)

$$\begin{aligned}
 \text{WIP Conversion Period} &= \frac{\text{Average Stock of WIP}}{\text{Annual Cost of Production}} \times 365 \\
 &= \frac{\frac{\text{₹ 35,000} + \text{₹ 51,300}}{2}}{\text{₹ 7,50,000}} \times 365 = 21 \text{ days}
 \end{aligned}$$

3. Finished Stock Storage Period (F)

$$\begin{aligned}
 &= \frac{\text{Average Stock of Finished Goods}}{\text{Cost of Goods Sold}} \times 365 \\
 &= \frac{\frac{\text{₹ 60,187} + \text{₹ 70,175}}{2}}{\text{₹ 9,15,000}} = \frac{\text{₹ 65,178}}{\text{₹ 9,15,000}} \times 365 = 26 \text{ days.}
 \end{aligned}$$

4. Receivables (Debtors) Collection Period (D)

$$= \frac{\text{Average Receivables}}{\text{Annual Credit Sales}} \times 365$$

7.18 Financial Management

$$= \frac{\text{₹}1,12,123 + \text{₹}1,35,000}{2} = \frac{\text{₹} 1,23,561.50}{\text{₹} 11,00,000} \times 365 = 41 \text{ days}$$

5. Payables (Creditors) Payment Period (C)

$$= \frac{\text{Average Payables for materials}}{\text{Annual Credit purchases}} \times 365$$
$$= \frac{\left(\frac{\text{₹} 50,079 + 70,469}{2} \right)}{\text{₹} 4,00,000} \times 365 = 55 \text{ days}$$

(i) Net Operating Cycle Period

$$= R + W + F + D - C$$
$$= 53 + 21 + 26 + 41 - 55$$
$$= 86 \text{ days}$$

(ii) Number of Operating Cycles in the Year

$$= \frac{365}{\text{Operating Cycle Period}} = \frac{365}{86} = 4.244 \text{ times}$$

(iii) Amount of Working Capital Required

$$= \frac{\text{Annual Operating Cost}}{\text{Number of Operating Cycles}} = \frac{\text{₹} 9,50,000}{4.244} = \text{₹} 2, 23,845$$

Question 6

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 (₹)
Raw material	40.00
Direct labour	15.00
Overhead	30.00
Total cost	85.00
Profit	15.00
Sales	100.00

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 ₹ 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.

Answer

Calculation of Working Capital Requirement

	(₹)	(₹)
A. Current Assets		
(i) Inventories:		
Raw material (4 weeks) $\left(\frac{₹40 \times 96,000}{52 \text{ weeks}} \times 4 \text{ weeks} \right)$	2,95,385	
WIP Inventory (2 weeks)		
- Material $\left(\frac{₹40 \times 96,000}{52 \text{ weeks}} \times 2 \text{ weeks} \right) \times 0.5$	73,846	
- Labour $\left(\frac{₹15 \times 96,000}{52 \text{ weeks}} \times 2 \text{ weeks} \right) \times 0.5$	27,692	
- Overheads $\left(\frac{₹30 \times 96,000}{52 \text{ weeks}} \times 2 \text{ weeks} \right) \times 0.5$	55,385	
Finished goods (4 weeks) $\left(\frac{₹85 \times 96,000}{52 \text{ weeks}} \times 4 \text{ weeks} \right)$	6,27,692	10,80,000

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(ii) Receivables (Debtors) (8 weeks) $\left(\frac{₹85 \times 96,000}{52 \text{ weeks}} \times 8 \text{ weeks} \right)$		12,55,385
(iii) Cash in hand & at bank		50,000
Total Current Assets		23,85,385
B. Current Liabilities:		
(i) Payables (Creditors) for materials (4 weeks) $\left(\frac{(₹40 \times 96,000) + 2,95,385}{52 \text{ weeks}} \times 4 \text{ weeks} \right)$		3,18,107
(ii) Outstanding wages (1.5 weeks) $\left(\frac{₹15 \times 96,000}{52 \text{ weeks}} \times 1.5 \text{ weeks} \right)$		41,538
(iii) Outstanding overheads (4 month) $\left(\frac{₹30 \times 96,000}{52 \text{ weeks}} \times 4 \text{ weeks} \right)$		2,21,538
Total Current Liabilities		5,81,183
Net Working Capital Needs (A – B)		18,04,202

Question 7

The following figures and ratios are related to a company:

(i) Sales for the year (all credit)	₹ 30,00,000
(ii) Gross Profit ratio	25 percent
(iii) Fixed assets turnover (based on cost of goods sold)	1.5
(iv) Stock turnover (based on cost of goods sold)	6
(v) Liquid ratio	1 : 1
(vi) Current ratio	1.5 : 1
(vii) Receivables (Debtors) collection period	2 months
(viii) Reserves and surplus to Share capital	0.6 : 1
(ix) Capital gearing ratio	0.5
(x) Fixed assets to net worth	1.20 : 1

You are required to prepare:

- (a) Balance Sheet of the company on the basis of above details.
 (b) The statement showing working capital requirement, if the company wants to make a provision for contingencies @ 10 percent of net working capital including such provision.

Answer

Working Notes:

- (i) Cost of Goods Sold = Sales – Gross Profit (25% of Sales)
 = ₹ 30,00,000 – ₹ 7,50,000
 = ₹ 22,50,000
- (ii) Closing Stock = Cost of Goods Sold / Stock Turnover
 = ₹ 22,50,000/6 = ₹ 3,75,000
- (iii) Fixed Assets = Cost of Goods Sold / Fixed Assets Turnover
 = ₹ 22,50,000/1.5
 = ₹ 15,00,000
- (iv) Current Assets : Current Ratio = 1.5 and Liquid Ratio = 1
 Stock = 1.5 – 1 = 0.5
 Current Assets = Amount of Stock × 1.5/0.5
 = ₹ 3,75,000 × 1.5/0.5 = ₹ 11,25,000
- (v) Liquid Assets (Debtors and Cash)
 = Current Assets – Stock
 = ₹ 11,25,000 – ₹ 3,75,000
 = ₹ 7,50,000
- (vi) Debtors = Sales × Debtors Collection period /12
 = ₹ 30,00,000 × 2 /12
 = ₹ 5,00,000
- (vii) Cash = Liquid Assets – Debtors
 = ₹ 7,50,000 – ₹ 5,00,000 = ₹ 2,50,000
- (viii) Net worth = Fixed Assets /1.2
 = ₹ 15,00,000/1.2 = ₹ 12,50,000
- (ix) Reserves and Surplus
 Reserves and Share Capital = 0.6 + 1 = 1.6

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$$\begin{aligned} \text{Reserves and Surplus} &= ₹ 12,50,000 \times 0.6/1.6 \\ &= ₹ 4,68,750 \end{aligned}$$

$$\begin{aligned} \text{(x) Share Capital} &= \text{Net worth} - \text{Reserves and Surplus} \\ &= ₹ 12,50,000 - ₹ 4,68,750 \\ &= ₹ 7,81,250 \end{aligned}$$

$$\begin{aligned} \text{(xi) Current Liabilities} &= \text{Current Assets} / \text{Current Ratio} \\ &= ₹ 11,25,000 / 1.5 = ₹ 7,50,000 \end{aligned}$$

(xii) Long-term Debts

$$\text{Capital Gearing Ratio} = \text{Long-term Debts} / \text{Equity Shareholders' Fund}$$

$$\text{Long-term Debts} = ₹ 12,50,000 \times 0.5 = ₹ 6,25,000$$

(a) Preparation of Balance Sheet of a Company

Balance Sheet

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity Share Capital	7,81,250	Fixed Assets	15,00,000
Reserves and Surplus	4,68,750	Current Assets	
Long-term Debts	6,25,000	Stock	3,75,000
Current Liabilities	7,50,000	Debtors	5,00,000
		Cash	2,50,000
	26,25,000		26,25,000

(b) Statement Showing Working Capital Requirement

	(₹)	(₹)
A. Current Assets		
(i) Stocks		3,75,000
(ii) Receivables (Debtors) (₹5,00,000 ÷ 1.25)		4,00,000
(iii) Cash in hand & at bank		2,50,000
Total Current Assets		10,25,000
B. Current Liabilities:		
Total Current Liabilities		7,50,000
Net Working Capital (A – B)		2,75,000
Add: Provision for contingencies (1/9 th of Net Working Capital)		30,556
Working capital requirement		3,05,556

Question 8

The management of MNP Company Ltd. is planning to expand its business and consults you to prepare an estimated working capital statement. The records of the company reveal the following annual information:

	(₹)
Sales –Domestic at one month's credit	24,00,000
Export at three month's credit (sales price 10% below domestic price)	10,80,000
Materials used (suppliers extend two months credit)	9,00,000
Lag in payment of wages – ½ month	7,20,000
Lag in payment of manufacturing expenses (cash) – 1 month	10,20,000
Lag in payment of Adm. Expenses – 1 month	2,40,000
Sales promotion expenses payable quarterly in advance	1,50,000
Income tax payable in four installments of which one falls in the next financial year	2,25,000

Rate of gross profit is 20%.

Ignore work-in-progress and depreciation.

The company keeps one month's stock of raw materials and finished goods (each) and believes in keeping ₹ 2,50,000 available to it including the overdraft limit of ₹ 75,000 not yet utilized by the company.

The management is also of the opinion to make 12% margin for contingencies on computed figure.

You are required to prepare the estimated working capital statement for the next year.

Answer

Preparation of Statement of Working Capital Requirement for MNP Company Ltd

	(₹)	(₹)
A. Current Assets		
(i) Inventories:		
Material (1 month) $\left(\frac{₹9,00,000}{12\text{months}} \times 1\text{month} \right)$	75,000	
Finished goods (1 months) $\left(\frac{₹28,80,000}{12\text{months}} \times 1\text{month} \right)$	2,40,000	3,15,000

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(ii) Receivables (Debtors)		
For Domestic Sales $\left(\frac{₹ 20,23,448}{12 \text{ months}} \times 1 \text{ month} \right)$	1,68,621	
For Export Sales $\left(\frac{₹ 10,06,552}{12 \text{ months}} \times 3 \text{ months} \right)$	2,51,638	4,20,259
(iii) Prepayment of Sales promotion expenses $\left(\frac{₹ 1,50,000}{12 \text{ months}} \times 3 \text{ months} \right)$		37,500
(iii) Cash in hand & at bank		1,75,000
Total Current Assets		9,47,759
B. Current Liabilities:		
(i) Payables (Creditors) for materials (2 months) $\left(\frac{₹ 9,00,000}{12 \text{ months}} \times 2 \text{ months} \right)$		1,50,000
(ii) Outstanding wages (0.5 months) $\left(\frac{₹ 7,20,000}{12 \text{ months}} \times 0.5 \text{ month} \right)$		30,000
(iii) Outstanding manufacturing expenses $\left(\frac{₹ 10,20,000}{12 \text{ months}} \times 1 \text{ month} \right)$		85,000
(iv) Outstanding administrative expenses $\left(\frac{₹ 2,40,000}{12 \text{ months}} \times 1 \text{ month} \right)$		20,000
(v) Income tax payable		56,250
Total Current Liabilities		3,41,250
Net Working Capital (A – B)		6,06,509
Add: 12% contingency margin		72,781
Total Working Capital required		6,79,290

Working Note:

1. Calculation of Cost of Goods Sold and Cost of Sales

	Domestic (₹)	Export(₹)	Total (₹)
Domestic Sales	24,00,000	10,80,000	34,80,000
Less: Gross profit @ 20% on domestic sales and 11.11% on export sales (Working note-2)	(4,80,000)	(1,20,000)	(6,00,000)
Cost of Goods Sold	19,20,000	9,60,000	28,80,000
Add: Sales promotion expenses (Working note-3)	1,03,448	46,552	1,50,000
Cash Cost of Sales	20,23,448	10,06,552	30,30,000

2. Calculation of gross profit on Export Sales:

Let domestic selling price is ₹100. Gross profit is ₹20, and then cost per unit is ₹80

Export price is 10% less than the domestic price i.e. ₹100 – (1- 0.1) = ₹90

Now gross profit will be ₹90 - ₹80 = ₹10

Therefore Gross profit at domestic price will be $\frac{₹10}{₹100} \times 100 = 10\%$

Or, gross profit at export price will be $\frac{₹10}{₹90} \times 100 = 11.11\%$

3. Apportionment of Sales promotion expenses between Domestic and Exports sales:

Apportionment on the basis of sales value:

$$\text{Domestic Sales} = \frac{₹1,50,000}{₹34,80,000} \times ₹24,00,000 = ₹1,03,448$$

$$\text{Exports Sales} = \frac{₹1,50,000}{₹34,80,000} \times ₹10,80,000 = ₹46,552$$

4. Assumptions

- (i) It is assumed that administrative expenses relating to production activities.
- (ii) Value of opening and closing stocks are equal.

Question 9

The Trading and Profit and Loss Account of Beta Ltd. for the year ended 31st March, 20X1 is given below:

7.26 Financial Management

Particulars	Amount (₹)	Amount (₹)	Particulars	Amount (₹)	Amount (₹)
To Opening Stock:			By Sales (Credit)		20,00,000
-Raw Materials	1,80,000		By Closing Stock:		
-Work- in- progress	60,000		-Raw Materials	2,00,000	
-Finished Goods	2,60,000	5,00,000	-Work-in-progress	1,00,000	
To Purchases (credit)		11,00,000	-Finished Goods	3,00,000	6,00,000
To Wages		3,00,000			
To Production Expenses		2,00,000			
To Gross Profit c/d		5,00,000			
		26,00,000			26,00,000
To Administration Expenses		1,75,000	By Gross Profit b/d		5,00,000
To Selling Expenses		75,000			
To Net Profit		2,50,000			
		5,00,000			5,00,000

The opening and closing balances of receivables were ₹ 1,50,000 and ₹ 2,00,000 respectively whereas opening and closing payables for raw materials were ₹ 2,00,000 and ₹ 2,40,000 respectively.

You are required to ascertain the working capital requirement by operating cycle method.

Answer

Computation of Operating Cycle

(1) Raw Material Storage Period (R)

$$\text{Raw Material Storage Period (R)} = \frac{\text{Average Stock of Raw Material}}{\text{Daily Average Consumption of Raw material}}$$

$$= \frac{(1,80,000 + 200,000) / 2}{10,80,000 / 360} = 63.33 \text{ Days}$$

$$\text{Raw Material Consumed} = \text{Opening Stock} + \text{Purchases} - \text{Closing Stock}$$

$$= ₹ 1,80,000 + ₹ 11,00,000 - ₹ 2,00,000 = ₹ 10,80,000$$

(2) Conversion/Work-in-Process Period (W)

$$\begin{aligned} \text{Conversion/Processing Period} &= \frac{\text{Average Stock of WIP}}{\text{Daily Average Production cost}} \\ &= \frac{(60,000 + 1,00,000) / 2}{15,40,000 / 360} = 18.7 \text{ days} \end{aligned}$$

<i>Production Cost:</i>		₹
Opening Stock of WIP	=	60,000
<i>Add:</i> Raw Material Consumed	=	10,80,000
<i>Add:</i> Wages	=	3,00,000
<i>Add:</i> Production Expenses	=	<u>2,00,000</u>
		16,40,000
<i>Less:</i> Closing Stock of WIP	=	<u>1,00,000</u>
Production Cost		<u>15,40,000</u>

(3) Finished Goods Storage Period (F)

$$\begin{aligned} \text{Finished Goods Storage Period} &= \frac{\text{Average Stock of Finished Goods}}{\text{Daily Average Cost of Good Sold}} \\ &= \frac{(2,60,000 + 3,00,000) / 2}{15,00,000 / 360} = 67.2 \text{ Days} \end{aligned}$$

<i>Cost of Goods Sold</i>		₹
Opening Stock of Finished Goods		2,60,000
<i>Add:</i> Production Cost		<u>15,40,000</u>
		18,00,000
<i>Less:</i> Closing Stock of Finished Goods		<u>(3,00,000)</u>
		<u>15,00,000</u>

(4) Receivables Collection Period (D)

$$\begin{aligned} \text{Receivables Collection Period} &= \frac{\text{Average Receivables}}{\text{Daily average credit sales}} \\ &= \frac{(150000 + 200000) / 2}{20,00,000 / 360} = 31.5 \text{ Days} \end{aligned}$$

(5) Payables Payment Period (C)

$$\text{Payables Payment Period} = \frac{\text{Average Payables}}{\text{Daily average credit purchase}}$$

7.28 Financial Management

$$= \frac{(2,00,000 + 2,40,000)/2}{11,00,000/360} = 72 \text{ Days}$$

(6) Duration of Operating Cycle (O)

$$\begin{aligned} O &= R + W + F + D - C \\ &= 63.33 + 18.7 + 67.2 + 31.5 - 72 \\ &= 108.73 \text{ days} \end{aligned}$$

Computation of Working Capital

(i) Number of Operating Cycles per Year

$$= 360/\text{Duration Operating Cycle} = 360/108.73 = 3.311$$

(ii) Total Operating Expenses ₹

Total Cost of Goods sold	15,00,000
Add: Administration Expenses	1,75,000
Add: Selling Expenses	<u>75,000</u>
	<u>17,50,000</u>

(iii) Working Capital Required

$$\begin{aligned} \text{Working Capital Required} &= \frac{\text{Total Operating Expenses}}{\text{Number of Operating Cycles per year}} \\ &= \frac{17,50,000}{3.311} = ₹ 5,28,541 \end{aligned}$$

[Note: The solution can also be solved by taking of 365 days a year.]

Question 10

STN Ltd. is a readymade garment manufacturing company. Its production cycle indicates that materials are introduced in the beginning of the production phase; wages and overhead accrue evenly throughout the period of cycle. The following figures for the 12 months ending 31st December 20X1 are given.

Production of shirts	54,000 units
Selling price per unit	₹ 200
Duration of the production cycle	1 month
Raw material inventory held	2 month's consumption
Finished goods stock held for	1 month

Credit allowed to debtors is 1.5 months and credit allowed by creditors is 1 month.

Wages are paid in the next month following the month of accrual.

In the work-in-progress 50% of wages and overheads are supposed to be conversion costs.

The ratios of cost to sales price are-raw materials 60% direct wages 10% and overheads 20%. Cash is to be held to the extent of 40% of current liabilities and safety margin of 15% will be maintained.

Calculate amount of working capital required for the company on a cash cost basis.

Answer

Working Notes:

1. Raw material inventory: The cost of materials for the whole year is 60% of the Sales value.

$$= \frac{54,000 \text{ units} \times (60\% \text{ of } ₹200)}{12 \text{ months}} \times 2 \text{ months} = ₹10,80,000$$

2. Work-in-process: (Each unit of production is expected to be in process for one month):

		(₹)
(a)	Raw materials in work-in-process (being one month's raw material requirements)	5,40,000
(b)	Labour costs in work-in-process $\left(\frac{54,000 \text{ units} \times (10\% \text{ of } ₹200)}{12 \text{ months}} \times 1 \text{ month} \right) \times 0.5$	45,000
(c)	Overheads $\left(\frac{54,000 \text{ units} \times (20\% \text{ of } ₹200)}{12 \text{ months}} \times 1 \text{ month} \right) \times 0.5$	90,000
		6,75,000

3. Finished goods inventory: $\frac{54,000 \text{ units} \times (90\% \text{ of } ₹200)}{12 \text{ months}} \times 1 \text{ month} = ₹8,10,000$

4. Receivables: $\frac{54,000 \text{ units} \times (90\% \text{ of } ₹200)}{12 \text{ months}} \times 1.5 \text{ months} = ₹12,15,000$

5. Payable to suppliers: $\frac{54,000 \text{ units} \times (60\% \text{ of } ₹200)}{12 \text{ months}} \times 1 \text{ month} = ₹5,40,000$

6. Direct Wages payable: $\frac{54,000 \text{ units} \times (10\% \text{ of } ₹200)}{12 \text{ months}} \times 1 \text{ month} = ₹90,000$

Calculation of Working Capital Requirement

	(₹)	(₹)
A. Current Assets		
(i) Inventories:		
- Raw Materials	10,80,000	
- Work-in-process	6,75,000	
- Finished goods	8,10,000	25,65,000
(ii) Receivables		12,15,000
(iii) Cash in hand (40% of ₹6,30,000)		2,52,000
Total Current Assets		40,32,000
B. Current Liabilities:		
(i) Payables for raw materials		5,40,000
(ii) Direct wages payables		90,000
		6,30,000
Net Working Capital (A – B)		34,02,000
Add: Safety margin (15% of Net Working Capital)		5,10,300
Working capital requirement		39,12,300

Question 11

Black Limited has furnished the following cost sheet:

	₹ Per Unit
Raw Material	98.00
Direct Labour	53.00
Factory Overhead (Includes depreciation of ₹ 15 per unit at budgeted level of activity)	88.00
Total Cost	239.00
Profit	43.00
Selling Price	282.00

Additional Information:

- (i) Average raw material in stock 3 weeks
- (ii) Average work-in-progress (% of completion with respect to
Material- 75% Labour & Overhead - 70%) 2 weeks

- (iii) Finished goods in stock 4 weeks
- (iv) Credit allowed to receivables 2½ weeks
- (v) Credit allowed by suppliers 3½ weeks
- (vi) Time lag in payments of labour 2 weeks
- (vii) Time lag in payments of factory overheads 1½ weeks
- (viii) Company sells, 25% of the output against cash
- (ix) Cash in hand and bank is desired to be maintained ₹ 2,25,000
- (x) Provision for contingencies is required @ 4% of working capital requirement including that provision.

You may assume that production is carried on evenly throughout the year and labour and factory overheads accrue similarly.

You are required to prepare a statement showing estimate of working capital needed to finance a budgeted activity level of 1,04,000 units of production. Finished stock, receivables and overhead are taken at cash cost.

Answer

Statement of Estimation of Working Capital Needs

	(₹)	(₹)
A. Current Assets		
(i) Inventories:		
- Raw Materials $\left(\frac{1,04,000 \text{ units} \times ₹98}{52 \text{ weeks}} \times 3 \text{ weeks} \right)$	5,88,000	
- Work-in-process		
Materials $\left(\frac{1,04,000 \text{ units} \times ₹98}{52 \text{ weeks}} \times 2 \text{ weeks} \right) \times 0.75$	2,94,000	
Labour & Overheads		
$\left(\frac{1,04,000 \text{ units} \times ₹126}{52 \text{ weeks}} \times 2 \text{ weeks} \right) \times 0.7$	3,52,800	
- Finished goods $\left(\frac{1,04,000 \text{ units} \times ₹224}{52 \text{ weeks}} \times 4 \text{ weeks} \right)$	17,92,000	30,26,800
(ii) Receivables $\left(\frac{1,04,000 \text{ units} \times ₹224}{52 \text{ weeks}} \times 2.5 \text{ weeks} \right) \times 0.75$		8,40,000

7.32 Financial Management

(iii) Cash in hand		2,25,000
Total Current Assets		40,91,800
B. Current Liabilities:		
(i) Payable to suppliers $\left(\frac{1,04,000 \text{ units} \times ₹98}{52 \text{ weeks}} \times 3.5 \text{ weeks} \right)$		6,86,000
(ii) Direct wages payables $\left(\frac{1,04,000 \text{ units} \times ₹53}{52 \text{ weeks}} \times 2 \text{ weeks} \right)$		2,12,000
(iii) Overheads payables $\left(\frac{1,04,000 \text{ units} \times ₹73}{52 \text{ weeks}} \times 1.5 \text{ weeks} \right)$		2,19,000
		11,17,000
Net Working Capital (A – B)		29,74,800
Add: Provision for contingencies (4% of total Working Capital requirement)		1,23,950
Working capital requirement		30,98,750

Question 12

The following information is provided by the DVP Ltd. for the year ending 31st March, 20X5.

Raw Material storage period	50 days
Work in progress conversion period	18 days
Finished Goods storage period	22 days
Debt Collection period	45 days
Creditors' payment period	55 days
Annual Operating Cost	21 Lacs
(Including depreciation of ₹ 2,10,000)	
(1 year = 360 days)	

You are required to calculate:

- Operating Cycle period.
- Number of Operating Cycles in a year.
- Amount of working capital required for the company on a cash cost basis.
- The company is a market leader in its product, there is virtually no competitor in the market. Based on a market research, it is planning to discontinue sales on credit and deliver products based on pre-payments. Thereby, it can reduce its working capital requirement

substantially. What would be the reduction in working capital requirement due to such decision?

Answer

(i) Calculation of Operating Cycle Period:

$$\begin{aligned} \text{Operating Cycle Period} &= R + W + F + D - C \\ &= 50 + 18 + 22 + 45 - 55 = 80 \text{ days} \end{aligned}$$

(ii) Number of Operating Cycle in a Year

$$= \frac{360}{\text{Operating Cycle Period}} = \frac{360}{80} = 4.5 \text{ times}$$

(iii) Amount of Working Capital Required

$$\begin{aligned} &= \frac{\text{Annual Operating Cost}}{\text{Number of Operating Cycle}} = \frac{(\text{₹ } 21,00,000 - \text{₹ } 2,10,000)}{4.5} \\ &= \frac{18,90,000}{4.5} = 4,20,000 \end{aligned}$$

(iv) Reduction in Working Capital

$$\begin{aligned} \text{Operating Cycle Period} &= R + W + F - C \\ &= 50 + 18 + 22 - 55 = 35 \text{ days} \\ \text{Amount of Working Capital Required} &= \frac{18,90,000}{360} \times 35 = \text{₹ } 1,83,750 \\ \text{Reduction in Working Capital} &= \text{₹ } 4,20,000 - \text{₹ } 1,83,750 = \text{₹ } 2,36,250 \end{aligned}$$

Question 13

The following data relating to an auto component manufacturing company is available for the year 20X4:

<i>Raw material held in storage</i>	<i>20 days</i>
<i>Receivables collection period</i>	<i>30 days</i>
<i>Conversion process period (raw material – 100%, other costs – 50% complete)</i>	<i>10 days</i>
<i>Finished goods storage period</i>	<i>45 days</i>
<i>Credit period from suppliers</i>	<i>60 days</i>
<i>Advance payment to suppliers</i>	<i>5 days</i>
<i>Total cash operating expenses per annum</i>	<i>₹ 800 lakhs</i>

75% of the total cash operating expenses are for raw material. 360 days are assumed in a year.

7.34 Financial Management

You are required to calculate:

- (i) Each item of current assets and current liabilities,
- (ii) The working capital requirement, if the company wants to maintain a cash balance of ₹ 10 lakhs at all times.

Answer

Particulars	For Raw Material	For Other Costs	Total
Cash Operating expenses	$\frac{75}{100} \times 800 = 600$	$\frac{25}{100} \times 800 = 200$	800.00
Raw Material Stock Holding	$\frac{20}{360} \times 600 = 33.33$	-	33.33
WIP Conversion	$\frac{10}{360} \times 600 = 16.67$	$\frac{5}{360} \times 200 = 2.78$	19.45
Finished Goods Stock Holding	$\frac{45}{360} \times 600 = 75$	$\frac{45}{360} \times 200 = 25$	100.00
Receivable Collection Period	$\frac{30}{360} \times 600 = 50$	$\frac{30}{360} \times 200 = 16.67$	66.67
Advance to suppliers	$\frac{5}{360} \times 600 = 8.33$	-	8.33
Credit Period from suppliers	$\frac{60}{360} \times 600 = 100$	-	100.00

Computation of working capital

	₹ in lakhs
Raw Material Stock	33.33
WIP	19.45
Finished Goods stock	100.00
Receivables	66.67
Advance to Suppliers	8.33
Cash	10.00
	237.78
Less: Payables (Creditors)	100.00
Working capital	133.78

UNIT – II : TREASURY AND CASH MANAGEMENT**SECTION-A****Question 1**

Explain briefly the functions of Treasury Department.

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:

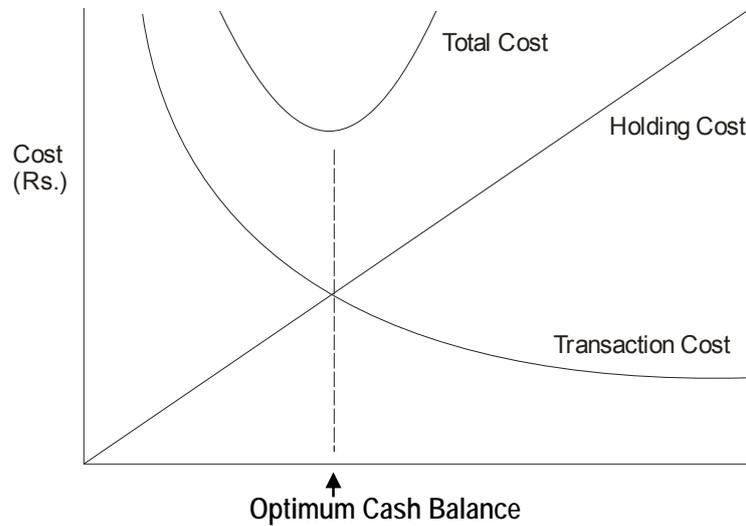
- (i) **Cash Management:** The efficient collection and payment of cash both inside the organization and to third parties is the function of treasury department. Treasury normally manages surplus funds in an investment portfolio.
- (ii) **Currency Management:** The treasury department manages the foreign 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

Explain Baumol's Model of Cash Management.

Answer

William J. Baumol developed a model for optimum cash balance which is normally used in inventory management. The optimum cash balance is the trade-off between cost of holding cash (opportunity cost of cash held) and the transaction cost (i.e. cost of converting marketable securities in to cash). Optimum cash balance is reached at a point where the two opposing costs are equal and where the total cost is minimum. This can be explained with the following diagram:



The optimum cash balance can also be computed algebraically.

$$\text{Optimum Cash Balance} = \sqrt{\frac{2AT}{H}}$$

A = Annual Cash disbursements

T = Transaction cost (Fixed cost) per transaction

H = Opportunity cost one rupee per annum (Holding cost)

The model is based on the following assumptions:

- (i) Cash needs of the firm are known with certainty.
- (ii) The cash is used uniformly over a period of time and it is also known with certainty.
- (iii) The holding cost is known and it is constant.
- (iv) The transaction cost also remains constant.

Question 3

State the advantage of Electronic Cash Management System.

Answer

Advantages of Electronic Cash Management System

- (i) Significant saving in time.
- (ii) Decrease in interest costs.
- (iii) Less paper work.
- (iv) Greater accounting accuracy.

- (v) More control over time and funds.
- (vi) Supports electronic payments.
- (vii) Faster transfer of funds from one location to another, where required.
- (viii) Speedy conversion of various instruments into cash.
- (ix) Making available funds wherever required, whenever required.
- (x) Reduction in the amount of 'idle float' to the maximum possible extent.
- (xi) Ensures no idle funds are placed at any place in the organization.
- (xii) It makes inter-bank balancing of funds much easier.
- (xiii) It is a true form of centralised 'Cash Management'.
- (xiv) Produces faster electronic reconciliation.
- (xv) Allows for detection of book-keeping errors.
- (xvi) Reduces the number of cheques issued.
- (xvii) Earns interest income or reduce interest expense.

Question 4

Explain the following:

- (i) *Concentration Banking*
- (ii) *Lock Box System*

Answer

- (i) **Concentration Banking:** In concentration banking the company establishes a number of strategic collection centres in different regions instead of a single collection centre at the head office. This system reduces the period between the time a customer mails in his remittances and the time when they become spendable funds with the company. Payments received by the different collection centers are deposited with their respective local banks which in turn transfer all surplus funds to the concentration bank of head office.
- (ii) **Lock Box System:** Another means to accelerate the flow of funds is a lock box system. The purpose of lock box system is to eliminate the time between the receipts of remittances by the company and deposited in the bank. A lock box arrangement usually is on regional basis which a company chooses according to its billing patterns.

Question 5

What is Virtual Banking? State its advantages.

Answer

Virtual Banking and its Advantages

Virtual banking refers to the provision of banking and related services through the use of information technology without direct recourse to the bank by the customer.

The advantages of virtual banking services are as follows:

- Lower cost of handling a transaction.
- The increased speed of response to customer requirements.
- The lower cost of operating branch network along with reduced staff costs leads to cost efficiency.
- Virtual banking allows the possibility of improved and a range of services being made available to the customer rapidly, accurately and at his convenience.

Question 6

Explain with example the formula used for determining optimum cash balance according to Baumol's cash management model.

Answer

Formula for Determining Optimum Cash Balance according to Baumol's Model

$$C = \sqrt{\frac{2UP}{S}}$$

Where,

C = Optimum cash balance

U = Annual cash disbursement

P = Fixed cost per transaction

S = Opportunity cost of one rupee p.a.

Example:

A firm maintains a separate account for cash disbursement. Total disbursements are ₹1,05,000 per month or ₹12,60,000 per year. An Administrative and transaction cost of transferring cash to disbursement account is ₹ 20 per transfer. Marketable securities yield is 8% per annum.

Determination of optimum cash balance according to William J. Baumol's model.

$$\text{The optimum cash balance } C = \sqrt{\frac{2 \times ₹12,60,000 \times ₹20}{0.08}} = ₹ 25,100$$

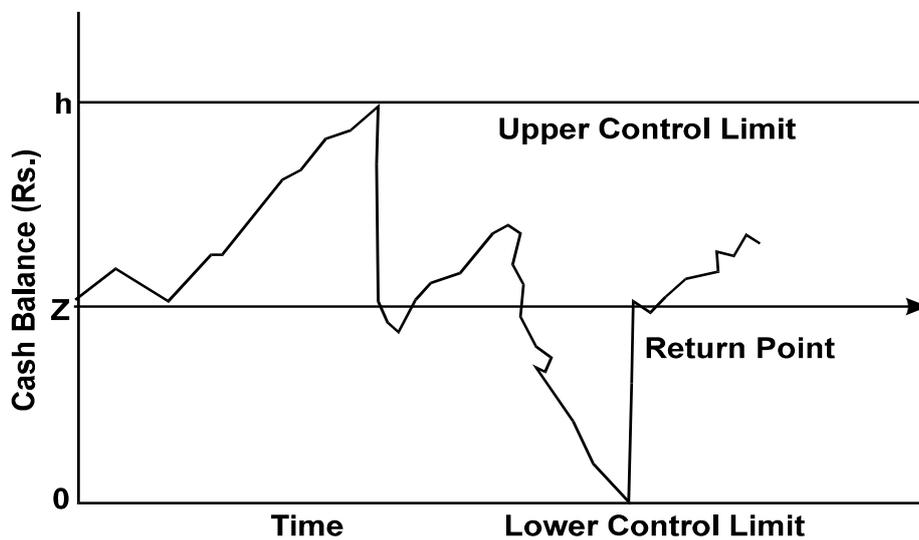
Question 7

Discuss Miller-Orr Cash Management model.

Answer

Miller – Orr Cash Management Model

According to this model the net cash flow is completely stochastic. When changes in cash balance occur randomly, the application of control theory serves a useful purpose. The Miller – Orr model is one of such control limit models. This model is designed to determine the time and size of transfers between an investment account and cash account. In this model control limits are set for cash balances. These limits may consist of 'h' as upper limit, 'z' as the return point and zero as the lower limit.



MILLER-ORR CASH MANAGEMENT MODEL

When the cash balance reaches the upper limit, the transfer of cash equal to 'h – z' is invested in marketable securities account. When it touches the lower limit, a transfer from marketable securities account to cash account is made. During the period when cash balance stays between (h, z) and (z, 0) i.e. high and low limits, no transactions between cash and marketable securities account is made. The high and low limits of cash balance are set up on the basis of fixed cost associated with the securities transaction, the opportunities cost of holding cash and degree of likely fluctuations in cash balances. These limits satisfy the demands for cash at the lowest possible total costs. The formula for calculation of the spread between the control limits is:

$$\text{Spread} = 3 \left(\frac{3/4 \times \text{Transaction Cost} \times \text{Variance of Cashflows}}{\text{Interest rate}} \right)^{1/3}$$

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And, the return point can be calculated using the formula:

$$\text{Return point} = \text{Lower limit} + \frac{\text{Spread}}{3}$$

Question 8

Write short note on Different kinds of float with reference to management of cash.

Answer

Different Kinds of Float with Reference to Management of Cash: The term float is used to refer to the periods that affect cash as it moves through the different stages of the collection process. Four kinds of float can be identified:

- (i) *Billing Float:* An invoice is the formal document that a seller prepares and sends to the purchaser as the payment request for goods sold or services provided. The time between the sale and the mailing of the invoice is the billing float.
- (ii) *Mail Float:* This is the time when a cheque is being processed by post office, messenger service or other means of delivery.
- (iii) *Cheque processing float:* This is the time required for the seller to sort, record and deposit the cheque after it has been received by the company.
- (iv) *Bank processing float:* This is the time from the deposit of the cheque to the crediting of funds in the seller's account.

Question 9

Write short note on William J. Baumol vs. Miller-Orr Cash Management Model.

Answer

William J Baumol vs Miller- Orr Cash Management Model: According to William J Baumol's Economic order quantity model optimum cash level is that level of cash where the carrying costs and transactions costs are the minimum. The carrying costs refer to the cost of holding cash, namely, the interest foregone on marketable securities. The transaction cost refers to the cost involved in getting the marketable securities converted into cash. This happens when the firm falls short of cash and has to sell the securities resulting in clerical, brokerage, registration and other costs.

The optimum cash balance according to this model will be that point where these two costs are equal. The formula for determining optimum cash balance is :

$$C = \sqrt{\frac{2U \times P}{S}}$$

Where,

- C = Optimum cash balance
- U = Annual (monthly) cash disbursements
- P = Fixed cost per transaction
- S = Opportunity cost of one rupee p.a. (or p.m)

Miller-Orr cash management model is a net cash flow stochastic model. This model is designed to determine the time and size of transfers between an investment account and cash account. In this model control limits are set for cash balances. These limits may consist of h as upper limit, z as the return point, and zero as the lower limit.

When the cash balances reach the upper limit, the transfer of cash equal to h-z is invested in marketable securities account. When it touches the lower limit, a transfer from marketable securities account to cash account is made. During the period when cash balance stays between (h,z) and (z, o) i.e high and low limits no transactions between cash and marketable securities account is made. The high and low limits of cash balance are set up on the basis of fixed cost associated with the securities transactions, the opportunity cost of holding cash and the degree of likely fluctuations in cash balances. These limits satisfy the demands for cash at the lowest possible total costs.

Question 10

'Management of marketable securities is an integral part of investment of cash.' Comment.

Answer

“Management of Marketable Securities is an Integral Part of Investment of Cash”

Management of marketable securities is an integral part of investment of cash as it serves both the purposes of liquidity and cash, provided choice of investment is made correctly. As the working capital needs are fluctuating, it is possible to invest excess funds in some short term securities, which can be liquidated when need for cash is felt. The selection of securities should be guided by three principles namely safety, maturity and marketability.

Question 11

Describe the three principles relating to selection of marketable securities.

Answer

Three Principles Relating to Selection of Marketable Securities

The three principles relating to selection of marketable securities are:

- (i) **Safety:** Return and risk go hand-in-hand. As the objective in this investment is ensuring liquidity, minimum risk is the criterion of selection.

- (ii) **Maturity:** Matching of maturity and forecasted cash needs is essential. Prices of long-term securities fluctuate more with changes in interest rates and are, therefore, riskier.
- (iii) **Marketability:** It refers to the convenience, speed and cost at which a security can be converted into cash. If the security can be sold quickly without loss of time and price, it is highly liquid or marketable.

Question 12

Evaluate the role of cash budget in effective cash management system.

Answer

Cash Budget is the most significant device to plan for and control cash receipts and payments. It plays a very significant role in effective Cash Management System. This represents cash requirements of business during the budget period.

The various role of cash budgets in Cash Management System are:-

- (i) Coordinate the timings of cash needs. It identifies the period(s) when there might either be a shortage of cash or an abnormally large cash requirement;
- (ii) It also helps to pinpoint period(s) when there is likely to be excess cash;
- (iii) It enables firm which has sufficient cash to take advantage like cash discounts on its accounts payable; and
- (iv) Lastly it helps to plan/arrange adequately needed funds (avoiding excess/shortage of cash) on favorable terms.

SECTION-B

Question 1

A new manufacturing company is to be incorporated from January 1, 2015. Its authorised capital will be ₹ 2 crores divided into 20 lakh equity shares of ₹ 10 each. It intends to raise capital by issuing equity shares of ₹ 1 crore (fully paid) on 1st January. Besides, a loan of ₹ 13 lakhs @ 12% per annum will be obtained from a financial institution on 1st January and further borrowings will be made at same rate of interest on the first day of the month in which borrowing is required. All borrowings will be repaid alongwith interest on the expiry of one year. The company will make payment for the following assets in January.

	₹ (in lakhs)
<i>Plant and Machinery</i>	20
<i>Land and Building</i>	40
<i>Furniture</i>	10
<i>Motor Vehicles</i>	10
<i>Stock of Raw Materials</i>	10

The following further details are available:

(1) Projected Sales (January-June):

	(₹ in lakhs)		(₹ in lakhs)
January	30	April	40
February	35	May	40
March	35	June	45

- (2) Gross profit margin will be 25% on sales.
- (3) The company will make credit sales only and these will be collected in the second month following sales.
- (4) Creditors will be paid in the first month following credit purchases. There will be credit purchases only.
- (5) The company will keep minimum stock of raw materials of ₹ 10 lakhs.
- (6) Depreciation will be charged @ 10% per annum on cost on all fixed assets.
- (7) Payment of preliminary expenses of ₹ 1 lakh will be made in January.
- (8) Wages and salaries will be ₹ 2 lakhs each month and will be paid on the first day of the next month.
- (9) Administrative expenses of ₹1 lakh per month will be paid in the month of their incurrence.

Assume no minimum required cash balance.

You are required to prepare the monthly cash budget (January-June), the projected Income Statement for the 6 months period and the projected Balance Sheet as on 30th June, 2015.

Answer

Monthly Cash Budget (January-June)

	Jan.	Feb.	March	April	May	June	Total
Opening cash balance	-	21.00	-	2.75	10.50	14.50	-
A. Cash inflows							
Equity shares	100.00	-	-	-	-	-	100.00
Loans	13	2.50	-	-	-	-	15.50
<i>(Refer to working note 1)</i>							
Receipt from debtors	<u>-</u>	<u>-</u>	<u>30.00</u>	<u>35.00</u>	<u>35.00</u>	<u>40.00</u>	<u>140.00</u>
Total (A)	<u>113.00</u>	<u>23.50</u>	<u>30.00</u>	<u>37.75</u>	<u>45.50</u>	<u>54.50</u>	<u>255.50</u>
B. Cash Outflows							
Plant and Machinery	20.00	-	-	-	-	-	20.00

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Land and Building	40.00	-	-	-	-	-	40.00
Furniture	10.00	-	-	-	-	-	10.00
Motor Vehicles	10.00	-	-	-	-	-	10.00
Stock of raw materials (minimum stock)	10.00	-	-	-	-	-	10.00
Preliminary expenses	1.00	-	-	-	-	-	1.00
Payment to creditors for credit purchases <i>(Refer to working note 2)</i>	-	20.50	24.25	24.25	28.00	28.00	125.00
Wages and salaries	-	2.00	2.00	2.00	2.00	2.00	10.00
Admn. expenses	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>6.00</u>
Total :(B)	<u>92.00</u>	<u>23.50</u>	<u>27.25</u>	<u>27.25</u>	<u>31.00</u>	<u>31.00</u>	<u>232.00</u>
Closing balance (A)-(B)	<u>21.00</u>	<u>-</u>	<u>2.75</u>	<u>10.50</u>	<u>14.50</u>	<u>23.50</u>	<u>23.50</u>

Budgeted Income Statement for the six-month period ending 30th June

(₹ In lakhs)

<i>Particulars</i>	₹	<i>Particulars</i>	₹
To Purchases	166.75	By Sales	225.00
To Wages and Salaries	12.00	By Closing stock	10.00
To Gross profit c/d	<u>56.25</u>		<u>235.00</u>
	<u>235.00</u>	By Gross profit b/d	56.25
To Admn. expenses	6.00		
To Depreciation (10% on ₹ 80 lakhs for six months)	4.00		
To Accrued interest on loan <i>(Refer to working note 3)</i>	0.905		
To Net profit c/d	<u>45.345</u>		
	<u>56.25</u>		56.25

Projected Balance Sheet as on 30th June, 2015

(₹ in lakhs)

<i>Liabilities</i>	<i>Amount</i> (₹)	<i>Assets</i>	<i>Amount</i> (₹)
Share Capital: Authorised capital 20,00,000 equity		Fixed Assets: Land and Building Less: Depreciation	40.00 38.00

shares of ₹ 10 each		<u>200.00</u>		<u>2.00</u>		
Issued, subscribed and paid up capital			Plant and Machinery	20.00		
10,00,000 equity shares of ₹ 10 each		100.00	Less: Depreciation		19.00	
Reserve and Surplus			Furniture	<u>1.00</u>		
Profit and Loss		45.345	Less: Depreciation	10.00	9.50	
Long-term loans		15.50	Motor Vehicles	10.00		
Current liabilities and provisions:			Less: Depreciation	<u>0.50</u>	<u>9.50</u>	76.00
Sundry creditors	31.75		Current Assets:			
Accrued interest	0.905		Stock		10.00	
Outstanding expenses	2.00	34.655	Sundry debtors		85.00	
			Cash		<u>23.50</u>	118.50
			Miscellaneous expenditure to the extent not written off:			
			Preliminary expenses			<u>1.00</u>
		<u>195.50</u>				<u>195.50</u>

Working Notes:

1. Subsequent Borrowings Needed (₹ in lakhs)

A. Cash Inflow

Equity shares	100.00					
Loans	13.00					
Receipt from debtors	—	—	<u>30.00</u>	<u>35.00</u>	<u>35.00</u>	<u>40.00</u>
Total (A)	<u>113.00</u>	—	<u>30.00</u>	<u>35.00</u>	<u>35.00</u>	<u>40.00</u>

B. Cash Outflow

Purchase of fixed assets	80.00					
Stock	10.00					
Preliminary expenses	1.00					
Payment to creditors	-	20.50	24.25	24.25	28.00	28.00
Wages and salaries	-	2.00	2.00	2.00	2.00	2.00

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Administrative expenses	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>
Total	<u>92.00</u>	<u>23.50</u>	<u>27.25</u>	<u>27.25</u>	<u>31.00</u>	<u>31.00</u>
Surplus/ (Deficit)	21.00	(23.50)	2.75	7.75	4.00	9.00
Cumulative balance	21.00	(2.50)	0.25	8.00	12.00	21.00

1. *There is shortage of cash in February of ₹ 25 lakhs which will be met by borrowings on February*

2. *Payment to Creditors*

Purchases = Cost of goods sold - Wages and salaries

Purchases for January = (75% of 30 lakhs) - ₹ 2 = ₹ 20.50 lakhs.

(Note: Since gross margin is 25% of sales, cost of manufacture i.e. materials plus wages and salaries should be 75% of sales)

Hence, Purchases = Cost of manufacture minus wages and salaries of ₹ 2 lakhs)

The creditors are paid in the first month following purchases.

Therefore, payment in February is ₹ 20.50 lakhs

The same procedure will be followed for other months.

Total purchases = ₹ 125 lakhs (for Jan-May) + ₹ 31.75 lakhs (for June) + ₹ 10 lakhs (stock) = ₹ 166.75 lakhs

3. *Accrued Interest on Loan*

12% interest on ₹ 13 lakhs for 6 months 0.78 lakhs

Add: 12% interest on ₹ 2.5 lakhs for 5 months 0.125 lakhs

0.905 lakhs

Question 2

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

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

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, = ₹ 45,826

Question 3

The following details are forecasted by a company for the purpose of effective utilization and management of cash:

(i) Estimated sales and manufacturing costs:

Year and month 2014	Sales ₹	Materials ₹	Wages ₹	Overheads ₹
April	4,20,000	2,00,000	1,60,000	45,000
May	4,50,000	2,10,000	1,60,000	40,000
June	5,00,000	2,60,000	1,65,000	38,000
July	4,90,000	2,82,000	1,65,000	37,500
August	5,40,000	2,80,000	1,65,000	60,800
September	6,10,000	3,10,000	1,70,000	52,000

(ii) Credit terms:

- Sales – 20 percent sales are on cash, 50 percent of the credit sales are collected next month and the balance in the following month.
- Credit allowed by suppliers is 2 months.
- Delay in payment of wages is ½ (one-half) month and of overheads is 1 (one) month.

(iii) Interest on 12 percent debentures of ₹ 5,00,000 is to be paid half-yearly in June and December.

(iv) Dividends on investments amounting to ₹ 25,000 are expected to be received in June, 2014.

(v) A new machinery will be installed in June, 2014 at a cost of ₹ 4,00,000 which is payable in 20 monthly instalments from July, 2014 onwards.

(vi) Advance income-tax, to be paid in August, 2014, is ₹ 15,000.

(vii) Cash balance on 1st June, 2014 is expected to be ₹ 45,000 and the company wants to keep it at the end of every month around this figure. The excess cash (in multiple of thousand rupees) is being put in fixed deposit.

You are required to prepare monthly Cash budget on the basis of above information for four months beginning from June, 2014.

Answer

Preparation of Monthly Cash Budget

Cash Budget for four months from June, 2014 to September, 2014

<i>Particulars</i>	<i>June</i> (₹)	<i>July</i> (₹)	<i>August</i> (₹)	<i>September</i> (₹)
Opening Balance	45,000	45,500	45,500	45,000
Receipts:				
Cash Sales	1,00,000	98,000	1,08,000	1,22,000
Collection from debtors	3,48,000	3,80,000	3,96,000	4,12,000
Dividends	<u>25,000</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total (A)	<u>5,18,000</u>	<u>5,23,500</u>	<u>5,49,500</u>	<u>5,79,000</u>
Payments:				
Creditors for Materials	2,00,000	2,10,000	2,60,000	2,82,000
Wages	1,62,500	1,65,000	1,65,000	1,67,500
Overheads	40,000	38,000	37,500	60,800
Installment for Machine	-	20,000	20,000	20,000
Interest on Debentures	30,000	-	-	-
Advance Tax	<u>-</u>	<u>-</u>	<u>15,000</u>	<u>-</u>
Total (B)	<u>4,32,500</u>	<u>4,33,000</u>	<u>4,97,500</u>	<u>5,30,300</u>
Surplus (A – B)	85,500	90,500	52,000	48,700
Fixed Deposits	<u>40,000</u>	<u>45,000</u>	<u>7,000</u>	<u>3,000</u>
Closing Balance	<u>45,500</u>	<u>45,500</u>	<u>45,000</u>	<u>45,700</u>

Working Notes:

(1) Cash Sales and Collection from Debtors:

<i>Month</i>	<i>Total Sales</i> (₹)	<i>Cash Sales</i> (₹)	<i>Credit Sales</i> (₹)	<i>Collection from Debtors</i>			
				<i>June</i> (₹)	<i>July</i> (₹)	<i>Aug.</i> (₹)	<i>Sept.</i> (₹)
April, 2010	4,20,000	84,000	3,36,000	1,68,000	-	-	-
May, 2010	4,50,000	90,000	3,60,000	1,80,000	1,80,000	-	-
June, 2010	5,00,000	1,00,000	4,00,000	-	2,00,000	2,00,000	-
July, 2010	4,90,000	98,000	3,92,000	-	-	1,96,000	1,96,000
Aug., 2010	5,40,000	1,08,000	4,32,000	-	-	-	2,16,000

Sept., 2010	6,10,000	1,22,000	4,88,000	-	-	-	-
			Total	<u>3,48,000</u>	<u>3,80,000</u>	<u>3,96,000</u>	<u>4,12,000</u>

(2) Payment of Wages

June = 80,000 + 82,500 = 1,62,500;

July = 82,500 + 82,500 = 1,65,000;

Aug. = 82,500 + 82,500 = 1,65,000; and

Sept. = 82,500 + 85,000 = 1,67,500.

(Note: It has been assumed that the company wants to keep minimum cash balance of ₹ 45,000.)

UNIT – III : MANAGEMENT OF INVENTORY

Question 1

A Ltd uses inventory turnover as one performance measure to evaluate its production manager. Currently, its inventory turnover (based on cost of goods sold ÷ inventory) is 10 times per annum, as compared with industry average of 4. Average sales are ₹ 4,50,000 p.a. variable costs of inventory have consistently remained at 70% of sales with fixed costs of ₹ 10,000. Carrying costs of inventory (excluding financing costs) are 5% per annum. Sales force complained that low inventory levels are resulting in lost-sales due to stock outs. Sales manager has made an estimate based on stock out reports as under:

Inventory Policy	Inventory Turnover	Sales in ₹
Current	10	4,50,000
A	8	5,00,000
B	6	5,40,000
C	4	5,65,000

On the basis of above estimates, assuming a 40% tax rate and an after tax required return of 20% on investment in inventory, which policy would you recommend?

Answer

Calculation of Cost of Goods Sold

Policy	Variable Cost (₹)	Fixed Cost (₹)	Total Cost (₹)
Current	$4,50,000 \times .7 = 3,15,000 +$	10,000	3,25,000
A	$5,00,000 \times .7 = 3,50,000 +$	10,000	3,60,000
B	$5,40,000 \times .7 = 3,78,000 +$	10,000	3,88,000
C	$5,65,000 \times .7 = 3,95,500$	10,000	4,05,500

Investment Level in Various Policies

		(₹)
Current	$3,25,000 \div 10$	32,500
A	$3,60,000 \div 8$	45,000
B	$3,88,000 \div 6$	64,667
C	$4,05,500 \div 4$	1,01,375

Evaluation of Inventory Policies

Policy	Current ₹	A ₹	B ₹	C ₹
Sales	4,50,000	5,00,000	5,40,000	5,65,000
Cost of Goods sold	<u>3,25,000</u>	<u>3,60,000</u>	<u>3,88,000</u>	<u>4,05,500</u>

Contribution	1,25,000	1,40,000	1,52,000	1,59,500
Less: Carrying cost @ 5%	<u>1,625</u>	<u>2,250</u>	<u>3,233</u>	<u>5,069</u>
Profit before tax	1,23,375	1,37,750	1,48,767	1,54,431
Incremental Profit (Before tax)		14,375	11,017	5,664
Incremental Profit (After tax)		8,625	6,610	3,398
Incremental Investment		12,500	19,667	36,708
Incremental Rate of Return (%)		69	33.6	9.26

Conclusion: Since the incremental rate of return is highest with inventory policy A, therefore, policy A should be followed.

Question 2

A publishing house purchases 72,000 rims of a special type paper per annum at cost ₹ 90 per rim. Ordering cost per order is ₹ 500 and the carrying cost is 5 per cent per year of the inventory cost. Normal lead time is 20 days and safety stock is NIL. Assume 300 working days in a year:

You are required:

- (i) Calculate the Economic Order Quantity (E.O.Q).
- (ii) Calculate the Reorder Inventory Level.
- (iii) If a 1 per cent quantity discount is offered by the supplier for purchases in lots of 18,000 rims or more, should the publishing house accept the proposal?

Answer

(i)
$$EOQ = \sqrt{\frac{2AO}{CC}}$$

$$= \sqrt{\frac{2 \times 72,000 \times 500}{5\% \text{ of } ₹ 90}} = \sqrt{1,60,00,000} = 4,000 \text{ Rims.}$$

(ii) Re-order Level = Normal Lead Time × Normal Usage
 = 20 × 240 = 4,800 Rims.
 Normal Usage = $\frac{\text{Annual usage}}{\text{Normal working days in a year}} = \frac{72,000}{300} = 240 \text{ Rims.}$

(iii) Evaluation of Quantity Discount Offer:

	<u>EOQ</u>	<i>Discount Offer</i>
Size of order	4,000 Rims	18,000 Rims
No. of orders in a year	18	4
Average inventory $\left(\frac{\text{Order size}}{2} \right)$	2,000 Rims	9,000 Rims

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Cost:	₹	₹
Ordering Cost @ ₹ 500 per order	9,000	2,000
Inventory carrying cost		
At EOQ – $(4,000/2) \times ₹ 4.5$	9,000	-
At Discount offer – $(18,000/2) \times ₹ 4.455$	-	40,095
<i>Purchases Cost</i>		
At EOQ – $72,000 \times ₹ 90$	64,80,000	-
At discount offer – $72,000 \times ₹ 89.10$	<u> </u>	<u>64,15,200</u>
Total Cost	<u>64,98,000</u>	<u>64,57,295</u>

Advise: The total cost is less in case of quantity discount offer. Hence, quantity discount offer should be accepted as there will be saving of ₹ 40,705.

Question 3

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 ₹ 25. Ordering cost is ₹ 40 per order and inventory carrying cost is estimated to be 35 per cent per year.

Required:

Calculate Economic Order Quantity (EOQ).

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) = ₹ 40 per order, Cost per unit = ₹ 25.

Inventory carrying cost of one unit (CC) = $₹ 25 \times 35\% = ₹ 8.75$

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

UNIT – IV : MANAGEMENT OF RECEIVABLES**SECTION-A****Question 1**

Explain briefly the accounts receivable systems.

Answer**Accounts Receivable Systems**

Manual systems of recording the transactions and managing receivables are cumbersome and costly. The automated receivable management systems automatically update all the accounting records affected by a transaction. This system allows the application and tracking of receivables and collections to store important information for an unlimited number of customers and transactions, and accommodate efficient processing of customer payments and adjustments.

Question 2

Explain the 'Ageing Schedule' in the context of monitoring of receivables.

Answer

Ageing Schedule: An important means to get an insight into collection pattern of debtors is the preparation of their 'Ageing Schedule'. Receivables are classified according to their age from the date of invoicing e.g. 0 – 30 days, 31 – 60 days, 61 – 90 days, 91 – 120 days and more. The ageing schedule can be compared with earlier month's figures or the corresponding month of the earlier year.

This classification helps the firm in its collection efforts and enables management to have a close control over the quality of individual accounts. The ageing schedule can be compared with other firms also.

Question 3

Write short note on Factoring.

Answer

Factoring: It is a new financial service that is presently being developed in India. Factoring involves provision of specialised services relating to credit investigation, sales ledger management, purchase and collection of debts, credit protection as well as provision of finance against receivables and risk bearing. In factoring, accounts receivables are generally sold to a financial institution (a subsidiary of commercial bank-called "Factor"), who charges commission and bears the credit risks associated with the accounts receivables purchased by it.

Its operation is very simple. Clients enter into an agreement with the "factor" working out a factoring arrangement according to his requirements. The factor then takes the responsibility of

monitoring, follow-up, collection and risk-taking and provision of advance. The factor generally fixes up a limit customer-wise for the client (seller).

Factoring offers the following advantages which makes it quite attractive to many firms.

- (1) The firm can convert accounts receivables into cash without bothering about repayment.
- (2) Factoring ensures a definite pattern of cash inflows.
- (3) Continuous factoring virtually eliminates the need for the credit department. That is why receivables financing through factoring is gaining popularity as useful source of financing short-term funds requirements of business enterprises because of the inherent advantage of flexibility it affords to the borrowing firm. The seller firm may continue to finance its receivables on a more or less automatic basis. If sales expand or contract it can vary the financing proportionally.
- (4) Unlike an unsecured loan, compensating balances are not required in this case. Another advantage consists of relieving the borrowing firm of substantially credit and collection costs and to a degree from a considerable part of cash management.

However, factoring as a means of financing is comparatively costly source of financing since its cost of financing is higher than the normal lending rates.

SECTION-B

Question 1

A new customer with 10% risk of non-payment desires to establish business connections with you. He would require 1.5 month of credit and is likely to increase your sales by ₹ 1,20,000 p.a. Cost of sales amounted to 85% of sales. The tax rate is 30%. Should you accept the offer if the required rate of return is 40% (after tax)?

Answer

Evaluation of Credit to New Customer

	Particulars	(₹)
A.	Profit on Additional Sales	
	Increase in Annual Sales	1,20,000
	<i>Less: Cost of Sales being 85%</i>	<u>1,02,000</u>
		18,000
	<i>Less: Bad Debts Loss (10% on sales)</i>	<u>12,000</u>
	Profit before Tax	6,000
	<i>Less: Tax @ 30%</i>	<u>1,800</u>
	Net Profit after Tax	<u>4,200</u>

B.	Opportunity Cost of investment in Receivables	5,100
C.	Net Benefits [A-B]	(900)

Decision: Since the estimated profit after tax on additional sales ₹ 4200 is less than the required return on additional investment of ₹ 5,100 in receivables, hence the offer should not be accepted.

Working Notes:

(i) Receivables Turnover = $\frac{12}{1.5} = 8$ Times

(ii) Average Investment in Receivables
 = $\frac{\text{Cost of Sales}}{\text{Receivables Turnover}} = \frac{1,02,000}{8} = ₹ 12,750$

(iii) Opportunity Cost of Funds Blocked = $12,750 \times 40/100 = 5,100$

Question 2

A Company has sales of ₹ 25,00,000. Average collection period is 50 days, bad debt losses are 5% of sales and collection expenses are ₹ 25,000. The cost of funds is 15%. The Company has two alternative Collection Programmes:

	<i>Programme I</i>	<i>Programme II</i>
Average Collection Period reduced to	40 days	30 days
Bad debt losses reduced to	4% of sales	3% of sales
Collection Expenses	₹ 50,000	₹ 80,000

Evaluate which Programme is viable.

Answer

Statement showing Evaluation of Credit Policies

<i>Particulars</i>	<i>Present Programme(50days)</i>	<i>Programme I(40 days)</i>	<i>Programme II(30 days)</i>
	₹	₹	₹
Sales revenues	25,00,000	25,00,000	25,00,000
Average collection period (days)	50	40	30

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Receivables (₹)	3,42,466 $\left(25,00,000 \times \frac{50}{365}\right)$	2,73,973	2,05,479
Reduction in receivables from present level (₹)	-	68,493	1,36,987
Savings in interest @ 15% p.a. (A)	-	₹ 10,274	₹ 20,548
% of bad debt loss	5%	4%	3%
Amount (₹)	1,25,000	1,00,000	75,000
Reduction in bad debts from present level (B)	-	25,000	50,000
Incremental benefits from present level (C) = (A) + (B)	-	35,274	₹ 70,548
Collection expenses (₹)	25,000	50,000	80,000
Incremental collection expenses from present level (D)	-	<u>25,000</u>	<u>55,000</u>
Increment net benefit (C – D)	-	<u>₹ 10,274</u>	<u>₹ 15,548</u>

Conclusion: From the analysis it is apparent that Programme I has a benefit of ₹ 10,274 and Programme II has a benefit of ₹ 15,548 over present level. Programme II has a benefit of ₹ 5,274 more than Programme I. Thus, benefits accrue at a diminishing rate and hence Programme II is more viable.

(Note: In absence of Cost of Sales, sales has been taken for purpose of calculating investment cost in receivables).

Alternative Solution

Statement showing Evaluation of Alternative Collection Policies

Particulars	Present Policy	Proposed Policy I	Proposed Policy II
Cost:			
(a) Opportunity Cost of Investment in Receivables	51,370	41,096	30,822
(b) Bad Debts	1,25,000	1,00,000	75,000
(c) Collection Expenses	<u>25,000</u>	<u>50,000</u>	<u>80,000</u>
	<u>2,01,370</u>	<u>1,91,096</u>	<u>1,85,822</u>

Recommendation: The Proposed Policy II should be adopted since the total costs under this policy is least as compared to other policies.

Working Note: Calculation of Opportunity Cost of Average Investments

$$\begin{aligned} \text{Opportunity Cost} &= \text{Total Sales} \times \frac{\text{Collection Period}}{365} \times \frac{\text{Rate of Return}}{100} \\ \text{Present Policy} &= ₹ 25,00,000 \times \frac{50}{365} \times \frac{15}{100} = ₹ 51,370 \\ \text{Proposed Policy I} &= ₹ 25,00,000 \times \frac{40}{365} \times \frac{15}{100} = ₹ 41,096 \\ \text{Proposed Policy II} &= ₹ 25,00,000 \times \frac{30}{365} \times \frac{15}{100} = ₹ 30,822 \end{aligned}$$

Question 3

A company has prepared the following projections for a year:

Sales	21,000 units
Selling Price per unit	₹ 40
Variable Costs per unit	₹ 25
Total Costs per unit	₹ 35
Credit period allowed	One month

The Company proposes to increase the credit period allowed to its customers from one month to two months. It is envisaged that the change in the policy as above will increase the sales by 8%. The company desires a return of 25% on its investment.

You are required to examine and advise whether the proposed Credit Policy should be implemented or not.

Answer

Statement showing Evaluation of Credit Policies

	Particulars	Present Policy (1 month)	Proposed Policy (2 months)
A.	Expected Profit:		
	(a) Net Credit Sales (Sales units × ₹ 40)	8,40,000	9,07,200
	(b) Less: Total Cost:		
	Variable (Sales units × ₹ 25)	5,25,000	5,67,000
	Fixed Cost	<u>2,10,000</u>	<u>2,10,000</u>
		<u>7,35,000</u>	<u>7,77,000</u>
	(c) Expected Profit [(a)-(b)]	<u>1,05,000</u>	<u>1,30,200</u>

7.58 Financial Management

B.	Opportunity Cost of Investment in Receivables	<u>15,313</u>	<u>32,375</u>
C.	Net Benefits [A-B]	<u>89,687</u>	<u>97,825</u>

Recommendation: Proposed Policy should be implemented since the net benefit under this policy are higher than those under present policy.

Working Note: Calculation of Opportunity Cost

$$\text{Opportunity Cost} = \text{Total Cost} \times \frac{\text{Collection Period}}{12} \times \text{Rate of Return}$$

$$\text{Present Policy} = ₹ 7,35,000 \times \frac{1}{12} \times \frac{25}{100} = ₹ 15,313$$

$$\text{Proposed Policy} = ₹ 7,77,000 \times \frac{2}{12} \times \frac{25}{100} = ₹ 32,375$$

Question 4

A firm has a current sales of ₹ 2,56,48,750. The firm has unutilised capacity. In order to boost its sales, it is considering the relaxation in its credit policy. The proposed terms of credit will be 60 days credit against the present policy of 45 days. As a result, the bad debts will increase from 1.5% to 2% of sales. The firm's sales are expected to increase by 10%. The variable operating costs are 72% of the sales. The Firm's corporate tax rate is 35%, and it requires an after-tax return of 15% on its investment. Should the firm change its credit period?

Answer

Statement Showing Evaluation of Credit Policies

	Particulars	Present Policy	Proposed Policy
A.	Expected Profit		
	(a) Credit Sales	2,56,48,750	2,82,13,625
	(b) Less: Total Cost other than Bad Debts	1,84,67,100	2,03,13,810
	(c) Less: Bad Debts	<u>3,84,731</u>	<u>5,64,273</u>
	(d) Profit before tax [(a)-(b)-(c)]	67,96,919	73,35,542
	(e) Less: Tax @ 35%	<u>23,78,922</u>	<u>25,67,440</u>
	(f) Profit after tax [(d)-(e)]	<u>44,17,997</u>	<u>47,68,102</u>
B.	Opportunity Cost of investment in Receivables	<u>3,46,258</u>	<u>5,07,845</u>
C.	Net Benefits [A-B]	<u>40,71,739</u>	<u>42,60,257</u>

Recommendation : Proposed Policy should be implemented since the net benefit under this policy are higher than those under present policy.

Working Note: Opportunity Costs of Average Investments

$$= \text{Total Cost} \times \frac{\text{Collection Period}}{360 \text{ days}} \times \text{Rate of Return}$$

Present Policy = ₹ 1,84,67,100 × $\frac{45}{360}$ × 15% = ₹ 3,46,258

Proposed Policy = ₹ 2,03,13,810 × $\frac{60}{360}$ × 15% = ₹ 5,07,845

Question 5

The credit manager of XYZ Ltd. is reappraising the company's credit policy. The company sells the products on terms of net 30. Cost of goods sold is 85% of sales and fixed costs are further 5% of sales. XYZ classifies its customers on a scale of 1 to 4. During the past five years, the experience was as under:

Classification	Default as a percentage of sales	Average collection period- in days for non-defaulting accounts
1	0	45
2	2	42
3	10	40
4	20	80

The average rate of interest is 15%. What conclusions do you draw about the company's Credit Policy? What other factors should be taken into account before changing the present policy? Discuss.

Answer

Since the amount of revenue generated from each category of customer is not given in the question. Let us consider ₹ 100 as the amount of revenue generated from each type of customer. Therefore, ₹ 100 shall be taken as the basis for reappraisal of Company's credit policy.

Statement showing Evaluation of credit Policies

	Particulars	Classification of Customers			
		1	2	3	4
A.	Expected Profit:				
	(a) Revenue	100	100	100	100
	(b) Total Cost other than Bad Debt:				

7.60 Financial Management

	(i) Cost of Goods Sold	85	85	85	85
	(ii) Fixed Cost	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
		<u>90</u>	<u>90</u>	<u>90</u>	<u>90</u>
	(c) Bad Debt	0	2.00	10.00	20.00
	(d) Expected Profit [(a)-(b)-(c)]	10	8.00	0	(10.00)
B.	Opportunity Cost of Investment in Receivables*	1.66	1.55	1.48	2.96
C.	Net Benefits [A-B]	8.34	6.45	(1.48)	(12.96)

Recommendation: The reappraisal of company's credit policy indicates that the company either follows a lenient credit policy or it is inefficient in collection of debts. Even though the company sells its products on terms of net 30 days, it allows average collection period for more than 30 to all categories of its customers.

The company can continue with customers covered in categories 1 and 2 since net benefits are favourable. The company either should not continue with customer covered in categories 3 and 4 or should reduce the bad debt % by at least 1.48% and 12.96% respectively since net benefits are unfavourable to the extent of 1.48% and 12.96% of sales respectively. The other factors to be taken into consideration before changing the present policy includes (i) past performance of the customers and (ii) their credit worthiness.

***Working Note: Calculation of Opportunity Cost**

$$\text{Opportunity Cost} = \text{Total Cost} \times \frac{\text{Average collection Period}}{365} \times \text{Rate of interest}$$

$$\text{For Category 1} = ₹ 90 \times \frac{45}{365} \times \frac{15}{100} = ₹ 1.66$$

$$\text{For Category 2} = ₹ 90 \times \frac{42}{365} \times \frac{15}{100} = ₹ 1.55$$

$$\text{For Category 3} = ₹ 90 \times \frac{40}{365} \times \frac{15}{100} = ₹ 1.48$$

$$\text{For Category 4} = ₹ 90 \times \frac{80}{365} \times \frac{15}{100} = ₹ 2.96$$

Question 6

A bank is analysing the receivables of Jackson Company in order to identify acceptable collateral for a short-term loan. The company's credit policy is 2/10 net 30. The bank lends 80 percent on accounts where customers are not currently overdue and where the average payment period does not exceed 10 days past the net period. A schedule of Jackson's receivables has been prepared. How much will the bank lend on pledge of receivables, if the bank uses a 10 per cent allowance for cash discount and returns?

Account	Amount ₹	Days Outstanding in days	Average Payment Period historically
74	25,000	15	20
91	9,000	45	60
107	11,500	22	24
108	2,300	9	10
114	18,000	50	45
116	29,000	16	10
123	<u>14,000</u>	27	48
	<u>1,08,800</u>		

Answer

Analysis of the receivables of Jackson Company by the bank in order to identify acceptable collateral for a short-term loan:

- (i) The Jackson Company's credit policy is 2/10 net 30.

The bank lends 80 per cent on accounts where customers are not currently overdue and where the average payment period does not exceed 10 days past the net period i.e. thirty days. From the schedule of receivables of Jackson Company Account No. 91 and Account No. 114 are currently overdue and for Account No. 123 the average payment period exceeds 40 days. Hence Account Nos. 91, 114 and 123 are eliminated. Therefore, the selected Accounts are Account Nos. 74, 107, 108 and 116.

- (ii) Statement showing the calculation of the amount which the bank will lend on a pledge of receivables if the bank uses a 10 per cent allowances for cash discount and returns

Account No.	Amount (₹)	90 per cent of amount (₹)	80% of amount (₹)
	(a)	(b)=90% of (a)	(c)=80% of (b)
74	25,000	22,500	18,000
107	11,500	10,350	8280
108	2,300	2,070	1,656
116	29,000	26,100	<u>20,880</u>
		Total loan amount	<u>48,816</u>

Question 7

JKL Ltd. is considering the revision of its credit policy with a view to increasing its sales and profit. Currently all its sales are on credit and the customers are given one month's time to settle the dues. It has a contribution of 40% on sales and it can raise additional funds at a cost

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of 20% per annum. The marketing manager of the company has given the following options along with estimates for considerations:

Particulars	Current Position	I Option	II Option	III Option
Sales (₹ in lakhs)	200	210	220	250
Credit period (in months)	1	1½	2	3
Bad debts (% of sales)	2	2½	3	5
Cost of Credit administration (₹ in lakhs)	1.20	1.30	1.50	3.00

You are required to advise the company for the best option.

Answer

Statement Showing Evaluation of Credit Policies

(₹ in lakhs)

Particulars	Current position (1 month)	Option I (1.5 months)	Option II (2 months)	Option III (3 months)
Sales	200	210	220	250
Contribution @ 40%	80	84	88	100
Increase in contribution over current level	–	4	8	20 (A)
Debtors = (Average Collection period x Credit Sale) 12	$\frac{1 \times 200}{12} = 16.67$	$\frac{1.5 \times 210}{12} = 26.25$	$\frac{2 \times 220}{12} = 36.67$	$\frac{3 \times 250}{12} = 62.50$
Increase in debtors over current level	–	9.58	20.00	45.83
Cost of funds for additional amount of debtors @ 20%	–	1.92	4.00	9.17 (B)
Credit administrative cost	1.20	1.30	1.50	3.00
Increase in credit administration cost over present level	–	0.10	0.30	1.80 (C)
Bad debts	4.00	5.25	6.60	12.50
Increase in bad debts over current levels	–	1.25	2.60	8.50 (D)
Net gain/loss A – (B + C + D)	–	0.73	1.10	0.53

Advise: It is suggested that the company JKL Ltd. should implement Option II with a net gain of ₹1.10 lakhs which has a credit period of 2 months.

Question 8

A company is presently having credit sales of ₹ 12 lakh. The existing credit terms are 1/10, net 45 days and average collection period is 30 days. The current bad debts loss is 1.5%. In order to accelerate the collection process further as also to increase sales, the company is contemplating liberalization of its existing credit terms to 2/10, net 45 days. It is expected that sales are likely to increase by 1/3 of existing sales, bad debts increase to 2% of sales and average collection period to decline to 20 days. The contribution to sales ratio of the company is 22% and opportunity cost of investment in receivables is 15 percent (pre-tax). 50 per cent and 80 percent of customers in terms of sales revenue are expected to avail cash discount under existing and liberalization scheme respectively. The tax rate is 30%.

Should the company change its credit terms? (Assume 360 days in a year).

Answer

Working Notes:

(i) Calculation of Cash Discount

Cash Discount = Total credit sales × % of customers who take up discount × Rate

$$\text{Present Policy} = \frac{12,00,000 \times 50 \times .01}{100} = ₹ 6,000$$

$$\text{Proposed Policy} = 16,00,000 \times 0.80 \times 0.02 = ₹ 25,600$$

(ii) Opportunity Cost of Investment in Receivables

$$\text{Present Policy} = 9,36,000 \times (30/360) \times (70\% \text{ of } 15)/100 = 78,000 \times 10.5/100 = ₹ 8,190$$

$$\text{Proposed Policy} = 12,48,000 \times (20/360) \times 10.50/100 = ₹ 7,280$$

Statement showing Evaluation of Credit Policies

<i>Particulars</i>	<i>Present Policy</i>	<i>Proposed Policy</i>
<i>Credit Sales</i>	<i>12,00,000</i>	<i>16,00,000</i>
<i>Variable Cost @ 78% of sales</i>	<i>9,36,000</i>	<i>12,48,000</i>
<i>Bad Debts @ 1.5% and 2%</i>	<i>18,000</i>	<i>32,000</i>

7.64 Financial Management

Cash Discount	6,000	25,600
Profit before tax	2,40,000	2,94,400
Tax @ 30%	72,000	88,320
Profit after Tax	1,68,000	2,06,080
Opportunity Cost of Investment in Receivables	8,190	7,280
Net Profit	1,59,810	1,98,800

Advise: Proposed policy should be adopted since the net benefit is increased by (₹ 1,98,800 – 1,59,810) ₹ 38,990.

Question 9

PTX Limited is considering a change in its present credit policy. Currently it is evaluating two policies. The company is required to give a return of 20% on the investment in new accounts receivables. The company's variable costs are 70% of the selling price. Information regarding present and proposed policies is as follows:

	Present Policy	Policy Option 1	Policy Option 2
Annual Credit Sales (₹)	30,00,000	42,00,000	45,00,000
Debtors turnover ratio	4 times	3 times	2.4 times
Loss due to bad debts	3% of sales	5% of sales	6% of sales

Note: Return on investment in new accounts receivable is based on cost of investment in debtors.

Which option would you recommend?

Answer

Statement Showing Evaluation of Credit Policies of PTX Limited (based on Total Cost Approach)

Particulars	Present Policy	Policy Option I	Policy Option II
Sales Revenue	30,00,000	42,00,000	45,00,000
Less: Variable Cost @70%	21,00,000	29,40,000	31,50,000
Contribution	9,00,000	12,60,000	13,50,000
Less: Other Relevant Costs			
Bad Debt Losses	(90,000)	(2,10,000)	(2,70,000)
Investment Cost	$(\frac{21,00,000}{4} \times 20\%)$	$(\frac{29,40,000}{3} \times 20\%)$	$(\frac{31,50,000}{2.4} \times 20\%)$

[Variable Cost(VC) ÷ Debtors Turnover Ratio(DTR)] × 20%	(1,05,000)	(1,96,000)	(2,62,500)
Profit	7,05,000	8,54,000	8,17,500

Recommendation: PTX Limited is advised to adopt Policy Option I.

(Note: In the above solution, investment in accounts receivable is based on total cost of goods sold on credit. Since fixed costs are not given in the problem, therefore, it is assumed that there are no fixed costs and investment in receivables is determined with reference to variable costs only. The above solution may alternatively be worked out on the basis of incremental approach. However, the recommendation would remain the same.)

Question 10

A firm has a total sales of ₹ 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 ₹ 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 net benefit to the firm. Assume 360 days in a year.

Answer

Working Notes:-

Average level of Receivables = $12,00,000 \times 90/360$ 3,00,000

Factoring Commission = $3,00,000 \times 2/100$ 6,000

Factoring Reserve = $3,00,000 \times 10/100$ 30,000

Amount Available for Advance = ₹ 3,00,000 - (6,000 + 30,000) 2,64,000

Factor will deduct his interest @ 16% :-

Interest = $\frac{₹ 2,64,000 \times 16 \times 90}{360 \times 100} = ₹ 10,560$

Advance to be paid = ₹ 2,64,000 - ₹ 10,560 = ₹ 2,53,440

Statement Showing Evaluation of Factoring Proposal

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

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B.	Firm's Savings on taking Factoring Service:	₹
	Cost of Administration Saved	50,000
	Cost of Bad Debts (₹ 12,00,000 × 1.5/100) avoided	<u>18,000</u>
	Total	<u>68,000</u>
C.	Net Benefit to the Firm (₹ 68,000 – ₹ 66,240)	<u>1,760</u>

Question 11

RST Limited is considering relaxing its present credit policy and is in the process of evaluating two proposed policies. Currently, the firm has annual credit sales of ₹ 225 lakhs and accounts receivable turnover ratio of 5 times a year. The current level of loss due to bad debts is ₹ 7,50,000. The firm is required to give a return of 20% on the investment in new accounts receivables. The company's variable costs are 60% of the selling price. Given the following information, which is a better option?

	Present Policy	Policy Option I	Policy Option II
Annual credit sales(₹)	225	275	350
Accounts receivable turnover ratio	5	4	3
Bad debt losses (₹)	7.5	22.5	47.5

Answer

Statement showing Evaluation of Credit Policies

	Particulars	Present Policy	Proposed Policy I	Proposed Policy II
A	Expected Profit :	₹	₹	₹
	(a) Credit Sales	225.00	275.00	350.00
	(b) Total Cost other than Bad Debts:			
	Variable Costs	135.00	165.00	210.00
	(c) Bad Debts	7.50	22.50	47.50
	(d) Expected Profit [(a)-(b)-(c)]	82.50	87.50	92.50
B	Opportunity Cost of Investment in Receivables*	5.40	8.25	14.00
C	Net Benefits [A-B]	77.10	79.25	78.50

Recommendation: The Proposed Policy I should be adopted since the net benefits under this policy are higher than those under other policies.

Working Note:

***Calculation of Opportunity Cost of Average Investments**

Opportunity Cost	=	Total Cost × $\frac{\text{Collection Period}}{12}$ × $\frac{\text{Rate of Return}}{100}$	
Present Policy	=	₹ 135 lacs × 2.4/12 × 20%	= ₹ 5.40 lakhs
Proposed Policy I	=	₹ 165 lacs × 3/12 × 20%	= ₹ 8.25 lakhs
Proposed Policy II	=	₹ 210 lacs × 4/12 × 20%	= ₹ 14.00 lakhs

Question 12

A firm has a total sales of ₹ 200 lakhs of which 80% is on credit. It is offering credit terms of 2/40, net 120. Of the total, 50% of customers avail of discount and the balance pay in 120 days. Past experience indicates that bad debt losses are around 1% of credit sales. The firm spends about ₹ 2,40,000 per annum to administer its credit sales. These are avoidable as a factor is prepared to buy the firm's receivables. He will charge 2% commission. He will pay advance against receivables to the firm at an interest rate of 18% after withholding 10% as reserve.

- (i) *What is the effective cost of factoring? Consider year as 360 days.*
- (ii) *If bank finance for working capital is available at 14% interest, should the firm avail of factoring service*

Answer

Particulars	(₹)
Total Sales	₹ 200 lakhs
Credit Sales (80%)	₹ 160 lakhs
Receivables for 40 days	₹ 80 lakhs
Receivables for 120 days	₹ 80 lakhs
Average collection period [(40 × 0.5) + (120 × 0.5)]	80 days
Average level of Receivables (₹ 1,60,00,000 × 80/360)	₹ 35,55,556
Factoring Commission (₹ 35,55,556 × 2/100)	₹ 71,111
Factoring Reserve (₹ 35,55,556 × 10/100)	₹ 3,55,556
Amount available for advance {₹ 35,55,556 - (3,55,556 + 71,111)}	₹ 31,28,889
Factor will deduct his interest @ 18% :	
Interest = $\frac{₹31,28,889 \times 18 \times 80}{100 \times 360}$	₹ 1,25,156
Advance to be paid (₹ 31,28,889 – ₹ 1,25,156)	₹ 30,03,733

(i) Statement Showing Evaluation of Factoring Proposal

		₹
A.	Annual Cost of Factoring to the Firm:	
	Factoring commission (₹ 71,111 × 360/80)	3,20,000
	Interest charges (₹ 1,25,156 × 360/80)	<u>5,63,200</u>
	Total	<u>8,83,200</u>
B.	Firm's Savings on taking Factoring Service:	₹
	Cost of credit administration saved	2,40,000
	Bad Debts (₹ 160,00,000 × 1/100) avoided	<u>1,60,000</u>
	Total	<u>4,00,000</u>
C.	Net Cost to the firm (A – B) (₹ 8,83,200 – ₹ 4,00,000)	<u>4,83,200</u>

$$\text{Effective cost of factoring} = \frac{\text{₹ } 4,83,200}{\text{₹ } 30,03,733} \times 100 = 16.09\% \text{ *}$$

* If cost of factoring is calculated on the basis of total amount available for advance, then, it will be

$$= \frac{\text{₹ } 4,83,200}{\text{₹ } 31,28,889} \times 100 = 15.44\%$$

- (ii) If Bank finance for working capital is available at 14%, firm will not avail factoring service as 14% is less than 16.08% (or 15.44%)

Question 13

A Ltd. has total sales of ₹ 3.2 crores 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 its receivable collection efforts are ₹ 5,00,000. 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 18% p.a. after withholding 10% as reserve.

Calculate the effective cost of factoring to the Firm.

Answer

Average level of Receivables	= 3,20,00,000 × 90/360	80,00,000
Factoring commission	= 80,00,000 × 2/100	1,60,000
Factoring reserve	= 80,00,000 × 10/100	8,00,000
Amount available for advance	= ₹ 80,00,000 - (1,60,000 + 8,00,000)	70,40,000

Factor will deduct his interest @ 18% :-

$$\text{Interest} = \frac{\text{₹ } 70,40,000 \times 18 \times 90}{100 \times 360} = \text{₹ } 3,16,800$$

Advance to be paid = ₹ 70,40,000 – ₹ 3,16,800 = ₹ 67,23,200

Statement Showing Evaluation of Factoring Proposal

		₹
A.	Annual Cost of Factoring to the Firm:	
	Factoring commission (₹ 1,60,000 × 360/90)	6,40,000
	Interest charges (₹ 3,16,800 × 360/90)	<u>12,67,200</u>
	Total	<u>19,07,200</u>
B.	Firm's Savings on taking Factoring Service:	₹
	Cost of credit administration saved	5,00,000
	Cost of Bad Debts (₹ 3,20,00,000 × 1.5/100) avoided	<u>4,80,000</u>
	Total	<u>9,80,000</u>
C.	Net Cost to the firm (₹ 19,07,200 – ₹ 9,80,000)	<u>9,27,200</u>
	Effective rate of interest to the firm = $\frac{\text{₹ } 9,27,200 \times 100}{67,23,200}$	13.79%*

(Note: The number of days in a year has been assumed to be 360 days.)

* It also can be calculated on amount available for advance (₹70, 40,000).

UNIT – V : MANAGEMENT OF PAYABLES (CREDITORS)

Question 1

Suppose ABC Ltd. has been offered credit terms from its major supplier of 2/10, net 45. Hence the company has the choice of paying ₹ 10 per ₹ 100 or to invest the ₹ 98 for an additional 35 days and eventually pay the supplier ₹ 100 per ₹ 100. The decision as to whether the discount should be accepted depends on the opportunity cost of investing ₹ 98 for 35 days. What should the company do?

Answer

If the company does not avail the cash discount and pays the amount after 45 days, the implied cost of interest per annum would be approximately:

$$\left(\frac{100}{100-2} \right)^{\frac{365}{35}} - 1 = 23.5\%$$

Now let us assume that ABC Ltd. can invest the additional cash and can obtain an annual return of 25% and if the amount of invoice is ₹ 10,000. The alternatives are as follows:

	<i>Refuse discount</i>	<i>Accept discount</i>
	₹	₹
Payment to supplier	10,000	9,800
Return from investing ₹ 9,800 between day 10 and day 45: $\frac{35}{365} \times ₹ 9,800 \times 25\%$	(235)	
Net Cost	9,765	9,800

Advise: Thus it is better for the company to refuse the discount, as return on cash retained is more than the saving on account of discount.

UNIT – VI: FINANCING OF WORKING CAPITAL

SECTION-A

Question 1

Discuss the meaning and features of 'Commercial paper'.

Answer

Commercial Paper and its Features

CP is a short term usance promissory note issued by a company, negotiable by endorsement and delivery, issued at such a discount on face value as may be determined by the issuing company. It is a money market instrument issued by highly rated corporate borrowers for meeting their working capital requirements.

In India corporate borrowers were allowed to issue CP since January, 1990. The main features of CP are:

- (i) CP is a short term money market instrument with fixed maturity value.
- (ii) It is a certificate evidencing an unsecured corporate debt of short term maturity.
- (iii) It is generally issued at discount to face value but it can also be issued in interest bearing form.
- (iv) CPs can be directly issued by a company to investors or through banks.
- (v) It is an unsecured instrument.

Question 2

Write short note on Commercial Paper.

Answer

Commercial paper (CP): To give a boost to the money market and reduce the dependence of highly rated corporate borrowers on bank finance for meeting their working capital requirement, corporate borrowers were permitted to arrange short-term borrowing by issue of commercial paper w.e.f. 1st Jan, 1990. It is being regulated by the RBI. The interest rates on such an instrument are determined by the market forces. The companies which are allowed to issue 'Commercial Paper' must have a net worth of ₹10 crores, maximum permissible bank finance not less than ₹25 crore and are listed on the stock exchange. In India, the cost of a C.P. will include the following components:

- Discount;
- Rating charges;
- Stamp duty;

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- Issuing ; and
- Issuing paying agent (IPA) charges.

A commercial paper is a short-term issuance promissory note issued by a company negotiable by endorsement and delivery, issued at such a discount on face value as may be determined by the company.

Question 3

Enumerate the various forms of bank credit in financing the working capital of a business organization

Answer

Forms of Bank Credit

Some of the forms of bank credit are:

- (i) *Short Term Loans*: In a loan account, the entire advance is disbursed at one time either in cash or by transfer to the current account of the borrower. It is a single advance and given against securities like shares, government securities, life insurance policies and fixed deposit receipts, etc.
- (ii) *Overdraft*: Under this facility, customers are allowed to withdraw in excess of credit balance standing in their Current Account. A fixed limit is therefore granted to the borrower within which the borrower is allowed to overdraw his account.
- (iii) *Clean Overdrafts*: Request for clean advances are entertained only from parties which are financially sound and reputed for their integrity. The bank has to rely upon the personal security of the borrowers.
- (iv) *Cash Credits*: Cash Credit is an arrangement under which a customer is allowed an advance up to certain limit against credit granted by bank. Interest is not charged on the full amount of the advance but on the amount actually availed of by him.
- (v) *Advances against goods*: Goods are charged to the bank either by way of pledge or by way of hypothecation. Goods include all forms of movables which are offered to the bank as security.
- (vi) *Bills Purchased/Discounted*: These advances are allowed against the security of bills which may be clean or documentary.

Usance bills maturing at a future date or sight are discounted by the banks for approved parties. The borrower is paid the present worth and the bank collects the full amount on maturity.
- (vii) *Advance against documents of title to goods*: A document becomes a document of title to goods when its possession is recognised by law or business custom as possession of the goods like bill of lading, dock warehouse keeper's certificate, railway receipt, etc. An

advance against the pledge of such documents is an advance against the pledge of goods themselves.

- (viii) *Advance against supply of bills:* Advances against bills for supply of goods to government or semi-government departments against firm orders after acceptance of tender fall under this category. It is this debt that is assigned to the bank by endorsement of supply bills and executing irrevocable power of attorney in favour of the banks for receiving the amount of supply bills from the Government departments.

SECTION-B

Question 1

A company is considering its working capital investment and financial policies for the next year. Estimated fixed assets and current liabilities for the next year are ₹ 2,60,00,000 and ₹ 2,34,00,000 respectively. Estimated Sales and EBIT depend on current assets investment, particularly inventories and book-debts. The financial controller of the company is examining the following alternative Working Capital Policies:

<i>Working Capital Policy</i>	<i>Investment in Current Assets (₹)</i>	<i>Estimated Sales (₹)</i>	<i>EBIT (₹)</i>
<i>Conservative</i>	<i>4,50,00,000</i>	<i>12,30,00,000</i>	<i>1,23,00,000</i>
<i>Moderate</i>	<i>3,90,00,000</i>	<i>11,50,00,000</i>	<i>1,15,00,000</i>
<i>Aggressive</i>	<i>2,60,00,000</i>	<i>10,00,00,000</i>	<i>1,00,00,000</i>

After evaluating the working capital policy, the Financial Controller has advised the adoption of the moderate working capital policy. The company is now examining the use of long-term and short-term borrowings for financing its assets. The company will use ₹ 2,50,00,000 of the equity funds. The corporate tax rate is 35%. The company is considering the following debt alternatives.

<i>Financing Policy</i>	<i>Short-term Debt (₹)</i>	<i>Long-term Debt (₹)</i>
<i>Conservative</i>	<i>54,00,000</i>	<i>1,12,00,000</i>
<i>Moderate</i>	<i>1,00,00,000</i>	<i>66,00,000</i>
<i>Aggressive</i>	<i>1,50,00,000</i>	<i>16,00,000</i>
<i>Interest rate-Average</i>	<i>12%</i>	<i>16%</i>

You are required to calculate the following:

- (1) *Working Capital Investment for each policy:*
- (a) *Net Working Capital position*
 - (b) *Rate of Return*
 - (c) *Current ratio*

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- (2) *Financing for each policy:*
- (a) *Net Working Capital position.*
- (b) *Rate of Return on Shareholders' equity.*
- (c) *Current ratio.*

Answer

- (1) Statement showing Working Capital for each policy

		Working Capital Policy		
		Conservative (₹)	Moderate (₹)	Aggressive (₹)
(i)	Current Assets	4,50,00,000	3,90,00,000	2,60,00,000
(ii)	Fixed Assets	2,60,00,000	2,60,00,000	2,60,00,000
(iii)	Total Assets	7,10,00,000	6,50,00,000	5,20,00,000
(iv)	Current liabilities	2,34,00,000	2,34,00,000	2,34,00,000
(v)	Net Worth: (iii) - (iv)	4,76,00,000	4,16,00,000	2,86,00,000
	Total liabilities (iv) + (v)	7,10,00,000	6,50,00,000	5,20,00,000
(vi)	Estimated Sales	12,30,00,000	11,50,00,000	10,00,00,000
(vii)	EBIT	1,23,00,000	1,15,00,000	1,00,00,000
	(a) Net working capital position: (i)-(iv)	2,16,00,000	1,56,00,000	26,00,000
	(b) Rate of return: (vii)/(iii)	17.3%	17.7%	19.2%
	(c) Current ratio: (i)/(iv)	1.92	1.67	1.11

- (2) Statement Showing Effect of Alternative Financing Policy

Financing Policy	Conservative	Moderate	Aggressive
Current Assets: (i)	3,90,00,000	3,90,00,000	3,90,00,000
Fixed Assets: (ii)	2,60,00,000	2,60,00,000	2,60,00,000
Total Assets: (iii)	6,50,00,000	6,50,00,000	6,50,00,000
Current Liabilities: (iv)	2,34,00,000	2,34,00,000	2,34,00,000
Short term Debt: (v)	54,00,000	1,00,00,000	1,50,00,000
Long term Debt: (vi)	1,12,00,000	66,00,000	16,00,000
Equity Capital (vii)	2,50,00,000	2,50,00,000	2,50,00,000
Total liabilities	6,50,00,000	6,50,00,000	6,50,00,000
Forecasted Sales	11,50,00,000	11,50,00,000	11,50,00,000
EBIT: (viii)	1,15,00,000	1,15,00,000	1,15,00,000

Less: Interest on short-term debt: (ix)	6,00,000 (12% of ₹ 54,00,000)	12,00,000 (12% of ₹1,00,00,000)	18,00,000 (12% of ₹1,50,00,000)
Long term debt : (x)	18,00,000 (16% of ₹1,12,00,000)	11,00,000 (16% of ₹ 66,00,000)	3,00,000 (16% of ₹1,16,00,000)
Earnings before tax :(xi) - (viii + ix)	91,00,000	92,00,000	94,00,000
Taxes @ 35%	32,00,000	32,00,000	33,00,000
Earnings after tax: (xii)	59,00,000	60,00,000	61,00,000
(a) Net Working Capital Position: (i) - [(iv) + (v)]	1,02,00,000	56,00,000	6,00,000
(b) Rate of return on Shareholders Equity capital:(xi) ÷ (vii)	23.6%	24%	24.4%
(c) Current Ratio :[(i)/(iv) + (v)]	1.35	1.17	1.02