# WORKING CAPITAL MANAGEMENT.

This refers to the management of current asset and current liabilities. It involves the administration and the policy guidelines of the C.A and C.L.

## Importance of W.C management.

1. Because the W.C represent the large proportion of the Company's total investment.
2. Because the Current asset are exposed to the risk of fraud.
3. Because W.C items are directly related to sales volume.
4. It is important to manage W.C items because the mgnt spends most of their time on routine decisions making which is concerned with C.A and C.L.

## Working Capital Financing policies

There are 3 types of W.C financing policies

1. Aggressive Financing policies
2. Conservative financing policies
3. Moderate / Matching financing policies

### 1. Aggressive Financing policies

Under this policy all the W.C items will be financed using the short term sources of finance. This is because short term sources of finance are cheaper. However the Companys liquidity position will decrease and will be required to pay back borrowed funds within a short period of time.

### Classification of Current Assets in a Company.

(a) permanent C.A
They are C.A which stays in the company for a period of more than one year.

(b) Temporary / fluctuating C.A
They are those current assets which fluctuates above optimal level.

### 2. Conservative Financing policy.

Under this policy, all the W.C items are financed using the longterm sources of finance.

### 3 Moderate / Matching financing policy

Under this financing policy, permanent working capital items are financed using the longterm sources of finance while fluctuating or temporary W.C will be financed using short term sources of finance.

prepared by JM

# NOV 2019 Q 26

(i) Solution

| Period | Total Amount | Permanent C.A | Temporary/Fluctuating C.A |
|---|---|---|---|
| J | 35000 | 35000 | – |
| F | 35000 | 35000 | – |
| M | 52500 | 35000 | 17500 |
| A | 70,000 | 35000 | 35000 |
| M | 105,000 | 35000 | 70000 |
| J | 157500 | 35000 | 122500 |
| J | 210,000 | 35000 | 175000 |
| A | 242500 | 35000 | 207500 |
| S | 157500 | 35000 | 122500 |
| O | 87500 | 35000 | 52500 |
| N | 70,000 | 35000 | 35000 |
| D | 52500 | 35000 | 17500 |
| | 1275000 | 420,000 | 855000 |

Average Monthly WC

Permanent 420,000 ÷ 12 = 35000

Temporary 855000 ÷ 12 = 71250

(ii) Aggressive policy

20% x 1275000 = 255000

Conservative policy

25% x 1275000 = 318,750

Matching policy

permanent = 25% x 420,000 = 105,000

Temporary = 20% x 855000 = 171000

276000

(iii) Best w.c financing policy is Aggressive policy.

AUG 2023 Q 29

Assign = May 2012 Q1b

Dec 2007 Q1a

# NOV 2020 Q 2b

Solution

| | | |
|---|---|---|
| Direct material | 30% x 15000 = | 4500 |
| Direct labour | 25% x 15000 = | 3750 |
| Variable OH | 10% x 15000 = | 1500 |
| Fixed OH | 15% x 15000 = | 2250 |
| Selling & Distribution | 5% x 15000 = | 750 |

## Value of Current Asset Requirement

Account Receivable $\frac{2.5}{12} \times 15000$ = 3125

Raw material $3/12 \times 4500$ = 1125

Work in progress

Material $2/12 \times 4500 \times 50\%$ = 375
Labour $2/12 \times 3750 \times 50\%$ = 312.5
Variable OH $2/12 \times 1500 \times 50\%$ = 125

Finished goods

Material $1/12 \times 4500$ = 375
Labour $1/12 \times 3750$ = 312.5
Variable OH $1/12 \times 1500$ = 125
Total Current Asset 5875

## Value of Current Liabilities

Direct material $2/12 \times 4500$ = 750
Direct labour $1/10 \times 3750$ = 75
Variable overhead $1/12 \times 1500$ = 125
Fixed overhead $1/12 \times 2250$ = 187.5
Selling & distribution $\frac{0.5}{12} \times 750$ = 31.25
1168.75

WC = C.A − C.L

5875 − 1168.75 = 4706.25

WC = 4,706,250

## May 2014 Q5-b

Annual output = 30,000
Monthly output = 30,000 ÷ 12 = 2500

Raw material p.m = 2500 × 200 = 500,000
labour p.m = 2500 × 50 = 125,000
overhead pm = 2500 × 150 = 375,000
10000,000

### Current Asset Requirement

Raw material 2,500,000 = 1000,000

Work in progress

Material 500,000 × 1/2 × 100% = 250,000
labour 125000 × 1/2 × 50% = 31250
overhead 375,000 × 1/2 × 50% = 93750

Finished goods

Material 500,000 × 1 = 500,000
labour 125,000 × 1 = 125000
overhead 375,000 × 1 = 375,000
Debtors 2000 × 500 × 2 = 2500,000
Cash Balance requirement = 250,000
Total Current Asset 5125,000

### Current liabilities

Creditors 500,000 × 1 = 500,000

WC = CA − CL

5125,000 − 500,000 = 4625,000

Assign June 2011 Q4c
June 2010 Q3a.

## Factors affecting selection of financing policy

1. Cost → The cost of finance differs from one source to another hence inorder to minimize the cost of borrowing, the company may be forced to raise finance from a given source of finance
2. Availability of funds at the time of investment
3. Terms and conditions of Borrowing.
4. Borrowing capacity of the company.
5. Management attitude toward the risk.

## Risk-Return Trade off / Liquidity profitability Trade off

The W.C financing policy involves a balance between risk and return. Risk is normally measured by the liquidity level of the company while return is measured by the profitability level of the company.

-> The aggressive financing policy is a high risk, high return approach since it uses short term sources of finance whose costs are lower hence profitability will increase but at a reduced liquidity level.

-> Conservative financing policy is a low risk, low return approach since it uses the long term sources of finance whose cost are high therefore it will decrease the profitability level

## Overcapitalization and Overtrading

### 1. Over-Capitalization.

A company is said to be overcapitalized if its working capital is in excess of its needs. The excess inventories, Receivables and cash will lead to low return in investment. long term funds will be tied in non-earning short term assets

Over Capitalization is therefore overinvestment in Current Asset

#### Signs of overcapitalization

1. Liquidity ratio - When current ratio is less than 2 times (2:1) or quick ratio is greater than 1 (1:1) it will indicate overcapitalization
2. Turnover period - Excess turnover period for inventories and receivables is an indicator of overcapitalization.
3. Sales to working capital ratio -> Volume of sale is compared with working capital investment hence it will be able to indicate whether the total volume of W.C is too high. hence this will be an indication of overcapitalization.

### 2. Over trading

This occurs when the company is growing too fast and trying to carry on a large volume of activities with its low level of capital. Although the company may be making high

profits, its likely to run into serious liquidity problems because it does not have enough capital for its short term financial obligations.

### Indicators of overtrading

1. liquidity deficit. i.e excess C.L over C.A
2. Decline in the Current ratio and Quick ratio
3. There is no substantial increase in ..... capital.
4. High increase in inventory levels.
5. Low inventory and receivable turnover
6. High increase in the volume of Current Asset.
7. High increase in the turnover ratio

### Solutions to solve problem of overtrading

1) Inject new capital from the shareholder.
2) Ensure that the management of receivables and inventory is accurate
3) Post pone the expansion plan until the business has a strong capital base.

## CASH MANAGEMENT

There are normally 2 models of cash mgnt:

(a) Boumol's cash mgnt model.
(b) Miller and Orr's cash mgnt model.

### (a) Boumol's Cash management model

This model was developed out of economic order quantity of inventory control. Its evaluated as follows

$$C = \sqrt{\frac{2FT}{K}}$$

where C - optimal cash balance
F - fixed transaction cost per transaction
T - total amount of cash required for the entire period
K - interest rate / opportunity cost

$$\text{No of Transfer} = \frac{\text{total amount required}}{\text{optimal cash balance}} = \frac{T}{C}$$

Total cost of maintaining cash balance

$$\text{Transfer cost} = \frac{T}{C} \times F$$

$$\text{Holding cost} = \frac{CK}{2}$$

$$\text{Average cash balance} = \frac{C + M}{2}$$

where: M → minimum cash balance

## NOV 2017 Q5d:

(i) optimal size of transaction

$$C = \sqrt{\frac{2FT}{K}} = \sqrt{\frac{2 \times 60 \times 12000{,}000}{0.05}} = 169{,}706$$

(ii) Frequency

No of transfers $= \frac{T}{C} = \frac{120000{,}000}{169706} = 71$ transfer

Frequency $= \frac{365}{71} = 5$ days

Transfer after 5 days

## May 2015 Q 2b

(i)

$$C = \sqrt{\frac{2FT}{K}} = \sqrt{\frac{2 \times 500 \times 2500{,}000{,}000}{0.12}} = 4{,}564{,}355$$

ii) Total cost of maintaining cash balance

ordering cost $= \frac{T}{C}F = \frac{2500{,}000{,}000}{4564355} \times 500 = 273861$

Holding cost $= \frac{CK}{2} = \frac{4564355 \times 0.12}{2} = \frac{273861}{547{,}722}$

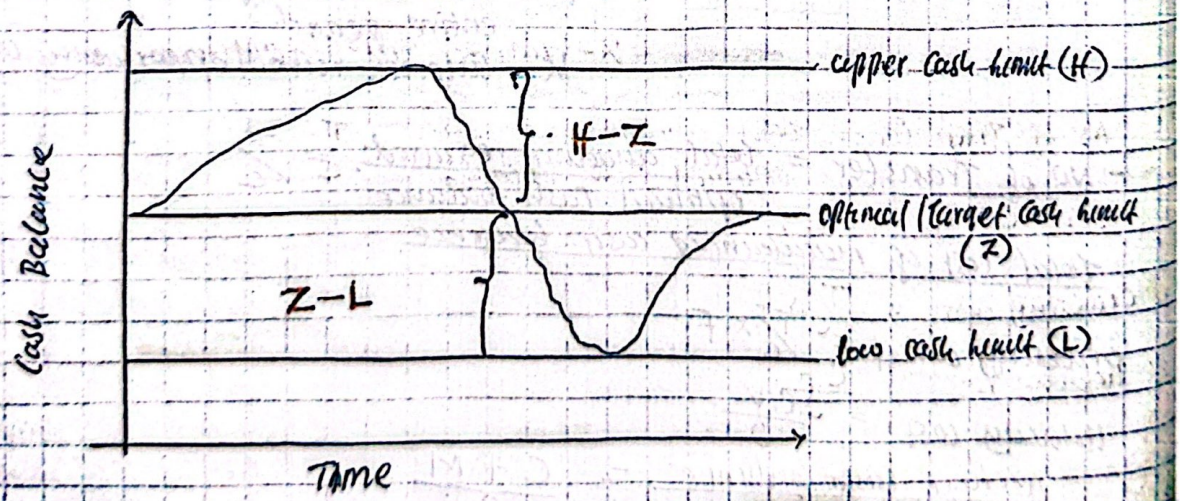
Assign- Nov 2011 Q 4b
June 2006 Q 2b
Dec 2008 Q 3b.

Assig DEC 2023 Q5C
AUG 2024 Q 3a

## 2 Miller and Orr's cash management model

This model was developed out of limitations and assumptions of Baumols model. Its a probabilistic model which introduces the uncertainty in the cash management.

-> It therefore came up with control limit or levels which is summarized in the diagram below.



According to Miller and orr's

i) Optimum target/Return point (Z)

$$Z = \left[\frac{3b\delta^2}{4i}\right]^{1/3} + L$$

where b → Transaction cost per transaction
δ → Standard deviation
$\delta^2$ – Variance of daily cashflow
i → Daily interest rate
L → lower cash limit

ii) Upper cash limit (H)

$$H = 3Z - 2L$$

iii) Average cash balance

$$\frac{4Z - L}{3}$$

iv) Spread is the difference between max and min

$$\text{spread} = H - L$$

**May 2018 Q1c**

L = 10,000
δ = 2500
b = 20
i = 9.2 ÷ 365

(i) optimal cash balance

$$Z = \left(\frac{3b\delta^2}{4i}\right)^{1/3} + L$$

$$Z = \left[\frac{3 \times 20 \times 2500^2}{4 \times \frac{0.092}{365}}\right]^{1/3} + 10{,}000 = \underline{17{,}192}$$

(ii) upper cash limit

$$H = 3Z - 2L$$
$$= 3 \times 17192 - 2 \times 10{,}000$$
$$= 31{,}576$$

(iii) Average Cash balance

$$\frac{4Z - L}{3} = \frac{4 \times 17192 - 10{,}000}{3} = \underline{19589}$$

(iv) Spread

$$H - L$$
$$31576 - 10{,}000 = \underline{21576}$$

NOV

May 2016 Q3b

L = 2000,000
δ = 22000
b = 60
i = 5÷365

(iii) Return point (Z)

$$Z = \left[\frac{3\delta^2 b}{4i}\right]^{1/3} + L \Rightarrow \left[\frac{3 \times 60 \times 22000^2}{4 \times \frac{0.05}{365}}\right]^{1/3} + 2000{,}000 = \underline{2{,}054{,}174}$$

(ii) Upper cash limit

H = 3Z − 2L

3 × 2054174 − 2 × 2000,000 = 2,162,522

(i) Spread

H − L ⇒

2162522 − 2000,000

= 162522

DEC 2022 Q3b

Assign NOV 2020 Q 3.9.
DEC 2012 Q 5d

## Reasons why Company holds cash

1. For Transaction purposes → Cash balance is necessary in the business operations. Payment have to be made in cash and the amount required is normally deposited in banks
2. For precautionary measures (emergency) → Sometimes individuals and companies holds cash for future emergencies
3. For speculative purposes → cash balance may be held to enable the company to take advantage of the bargaining power inorder to receive any discount offered by supplier
4. Financing borrowed funds
5. To enable the company pay its bills on time

Compensating balance → Is the minimum balance maintained in bank account so as to secure a loan.

Line of credit → Maximum credit which can be obtained from a bank

# DEBTORS MANAGEMENT

Debtors arises from sales on credit. A company normally sells on credit due to the following reasons.

1. In order to increase the sales volume.
2. In order to avoid stock from getting out of fashion.
3. In order to maintain new and existing customers
4. In order to avoid the fluctuation in the prices.
5. In order to enable the customers to have advantage of quantity and discount.

Traditional method of determining credit worth standard. Involves the following 5 C's.

1. Character → Is the assessment of customer honesty and integrity
2. Capacity → Is the assessment of the ability to pay
3. Capital → " " " " " Capital resources of the customer
4. Collateral (security → This involves evaluation of security to secure credit
5. Conditions → Decision to give credit to customer may be influenced by the prevailing conditions in the country.

## Collection policy

This is the company's systems and procedure of collecting payment from the customer when they fall due. A company may adopt any of the following 2 Credit policies.

### (a) Lineint / Liberal Credit policy

Under this policy, lineint terms are given for a longer period. This will lead to increased sales volume and increase in bad debt.

### (b) Conservative or Stringent Credit policy

This is where the company sells on credit on a highly selective basis to those customer who have been credit worth and who are financially stable. This will lead to a decrease in the company's sales volume and a decrease in bad debt expenses

## June 2006 Q 2c

A company currently extends a credit period of 30 days to its debtor. It intends to change the term Credit term: to 3/15 net 45 in order to increase sales.

The proposed change in credit terms will have the following implications:

1. Sales will increase by sh 5m per annum of which sh 800,000 will qualify for discount.
2. Bad debt on the additional sales will be 1%.
3. Production & adm expenses will be 7½ of the additional sales.
4. Opportunity cost are estimated to be 10% of the increased investment in receivables

The minimum return expected by the company on all its investment is 10%

Required

Assess the impact of the new credit policy on the company's profit and advice the management on the appropriate course of action (8 mks)

Solution:

Incremental Debtors = $\frac{\text{Credit sales} \times \text{Average collection period}}{\text{Number of days in a year}}$

Credit term 3/15-Net 45 where: 3 → Discount rate
15 → Discount period
45 → Credit period.

Average debtors

With discount = $\frac{800{,}000 \times 15}{365} = 32877$

Without discount = $\frac{4200{,}000 \times 45}{365} = \frac{517808}{550{,}685}$

Profit statement

| | |
|---|---|
| Incremental sales | 5000,000 |
| Production & adm expenses [74% × 5000,000] | (3700,000) |
| Incremental contributions | 1300,000 |
| Opportunity cost on debtors 10% × 550685 | (55069) |
| Discount allowed 3% × 800,000 | (24000) |
| Bad debt 1% × 5000,000 | (50,000) |
| Incremental profit | 1,170,931 |

Comment: Change the credit policy

DEC 2013 Q1 c

| Current policy | Proposed |
|---|---|
| 2/15 Net 45 | 3/15 Net 45 |
| Average debtors: | |
| with discount $\frac{(200 \times 50\%) \times 15}{360} = 416667$ | $\frac{(210 \times 60\%) \times 15}{360} = 5250,000$ |
| without discount $\frac{(200 \times 50\%) \times 30}{360} = \frac{8333333}{12500,000}$ | $\frac{(210 \times 60\%) \times 27}{360} = \frac{6300,000}{11550,000}$ |
| Opportunity cost on debtors | |
| 12% × 12500,000 = 1500,000 | 12% × 11550,000 = 1386,000 |

profit statement:

| | | | |
|---|---|---|---|
| Incremental Contribution: 20%x200m. | 40,000,000 | 20%x210 | 42000000 |
| opportunity cost on debtors | (1500,000) | | (1386,000) |
| Discount on debtors: 2%x200x50% | (2000,000) | 3%x210x60% | (3780,000) |
| profit before tax | 36500,000 | | 36834,000 |
| tax 30% | (10950,000) | | (11 050 200) |
| PAT | 25,550,000 | | 25783800 |

comment: they should undertake the proposed policy since it has the highest profit

NOV 2019 Q1b

| current policy | | proposed policy | |
|---|---|---|---|
| Credit sales = 80%x6m = 4.8m | | Sales = 6mx140% = 8.4m | |
| | | Credit sales = 60%x8.4 = 5.04m | |
| Average debtors | | Avereye debtors: | |
| 4.8mx45/365 = 591,781 | | 5.04mx15/365 = 207,123 | |
| Gross profit 75%x6m = | 4500000 | 80%x8.4m | 6720,000 |
| Bad debt 3%x4.8m = | (144,000) | 5%x5.04 | (252000) |
| opportunity cost 12%x591781 = | (71014) | 12%x207123 | (24855) |
| part time consultant | | | (500,000) |
| Discount allowed | | 5%x5.04 | (252000) |
| PBT | 4284986 | | 5691145 |
| tax | (1285496) | | (1707344) |
| PAT | 2999490 | | 3983801 |

They should adopt the proposed policy

## DEC 2022 Q4C

(a) Average debtors collection period $= \frac{360 \text{ days} \times \text{Average debtors}}{\text{Credit sales}} = \frac{360 \times 3000}{15000} = 72 \text{ days}$

(i) Variable cost ratio $= \frac{\text{Variable cost}}{\text{Sales}} \times 100\% = \frac{13500}{15000} \times 100\% = 90\%$

Average debtors $= \frac{\text{Credit sales} \times \text{Debtors period}}{360}$

Expected sales $= 140\% \times 15000 = 21{,}000$

Average debtor under proposed policy

with discount $= \frac{(21000 \times 70\%) \times 10}{360} = 408$

without discount $= \frac{(21000 \times 30\%) \times 36}{360} = \frac{630}{1038}$

### profit statement

| Current policy | | Proposed policy | |
|---|---|---|---|
| Sales | 15000 | | 21000 |
| Variable cost | (13500) | 90% × 21000 | (18900) |
| Contribution | 1500 | | 2100 |
| Fixed cost | (600) | | (600) |
| Bad debt 2% × 15000 | (300) | 2% × 21000 | (420) |
| Discount allowed | - | 2% × 21000 × 70% | (294) |
| Opportunity cost on debtors (4·8% × 3000) | (144) | 4·8% × 1038 | (50) |
| profit | 456 | | 736. |

Incremented profit $= 736 - 456 = 280$

(ii)

April 2022 Q2b → Do this

| Current policy | | Proposed policy | |
|---|---|---|---|
| Sales = 60000000 | | Sales = 105% × 60000000 = 63000000 | |
| Average debtors: | | Average debtors: | |
| 60000000 × 40 / 365 = 657534 | | with discount (63000000 × 30%) × 15 / 365 = 77671 | |
| | | without (63000000 × 70%) × 60 / 365 = 724931 | |
| | | | 802602 |
| Sales | 60000000 | Sales | 63000000 |
| cost of sales (40% × 60m) | (24000000) | COS 40% × 63m | (25200000) |
| Contribution | 36000000 | | 37800000 |
| opportunity cost [7% × 657534] | (46027) | 7% × 802602 | (56182) |
| | | Incremental cost (0.5% × 63000000) | (31500) |
| | | Discount 1.5% × 63m × 30% | (28350) |
| | 31553973 | | 37663968 |

They should adopt the proposed policy

Assig Sep 2021 Q4c

## Financing of Account Receivables

There are normally 2 methods of financing account receivables:

(a) Invoice discounting / pledging / Assigning

(b) Factoring

### (a) Invoice discounting

It involves borrowing and then offering account receivables as security. Under this arrangements, the debtors are not notified and the risk of non-payment remains with the company. The debtors are therefore required to pay to the company directly.

### (b) Factoring

This involves transfering account receivables to a 3rd party known as the factor. In this case the debtors are notified

of the arrangement and will be required to pay directly to the factor hence the factor will assume the risk of non-payment

## Adv of factoring

1. The factor will enable the company to pay its suppliers on time hence enabling the company to take advantage of quantity discount being offered.
2. The factor will save the management time and problem of debtors management.
3. Since the debtor are taken over by the factor, it reduces the cost of maintaining the sale department in the company.

## Disadvantages

1. The amount received from the factor is less than actual value of the debtor hence making factoring to be expensive.
2. Since the debtor will make payment directly to the factor, this will reflect a negative image about the company.
3. The factor is likely to take over those customers who are credit worth and leave those who are not credit worth to the company.

## Difference btw factoring and invoice discounting

| | Factoring | Invoice Discounting. |
|---|---|---|
| 1. | It involves selling of debtor to a 3rd party known as factor | 1. It involves use of debtors as security to obtain credit facility. |
| 2 | The debtors are notified of the arrangement. | 2. Debtors are not notified of the arrangement. |
| 3 | Debtors are required to pay directly to the factor | 3 Debtors pays directly to the company. |
| 4. | The factor will carry out the credit risk analysis | 4 The company will carry out its own credit analysis |
| 5. | The factor will manage the sales department of the company. | 5. The company maintains its own sales ledger department |
| 6 | The factor is responsible for the risk of non-payment | 6. The company is responsible for non payment risk (default risk) |

# INVENTORY MANAGEMENT.

Inventory Controls are measures taken to ensure that the actual cost does not exceed the budgeted cost.

∴ for this measures to be effective, the following decisions are considered:

(a) Optimal order size
(b) Optimal safety stock.
(c) Optimal number of orders

## Inventory related cost

- Purchase cost

This is the actual amount paid to acquire the ownership of the item

- Ordering cost

They are cost incurred whenever order is placed eg cost of preparing and printing order documents, flight cost, transport cost, offloading cost etc

- Holding cost

They are costs incurred whenever inventory is held in the store eg cost of capital, warehouse rent, obsolence, insurance, storekeepers wages etc

- Shortage/stock out cost

This is the benefit foregone whenever the customer fails to get the required item.

## Inventory control systems

1. Economic order Quantity (EOQ)
2. Economic Batch Quantity (EBQ)

## Economic order quantity

EOQ is the quantity which can be purchased at the most economic cost. EOQ model is applied by trading companies:

The model is divided into 2 as follows:

→ Deterministic EOQ

→ Stochastic EOQ

(a) Deterministic EOQ

This is applied where all the inventory related costs are certain and remain unchanged over the analysis period.

Assumptions of EOQ

- Demand is well known in advance and remain constant.
- Lead time is well known in advance.
- There are no shortages hence no shortage cost
- Purchase cost is constant.
- ordering cost remain constant

Optimal order size (EOQ) = $\sqrt{\frac{2DS}{h}}$

No of annual orders = $D/Q$

Re-order level (ROL) = Daily demand x lead time

Cost of predicting error (COPE) = Actual total cost − Optimal cost

Total cost = purchase cost + ordering cost + holding cost

$TC = DXC + D/QXS + Q/2\,h$

where: D - Annual demand

S - Fixed order cost

h - holding cost (cost of capital x purchase cost)

Q - EOQ

C - purchase price/cost

Illustration 1

A company has an annual demand of 15,000 units each costing 80sh. fixed cost per order is 2500sh while the cost of capital is 20%. The company works for 300 days in a year and has a lead time of 7 days.

Required:

(i) Optimal order size

(ii) Number of annual orders

(iii) Reorder level

(iv) Cost of predicting error (COPE) if actual cost of the capital and the ordering cost were 18% and sh 3000 respectively.

Solution

(i) Optimal order size (EOQ)

$$EOQ = \sqrt{\frac{2DS}{h}} = \sqrt{\frac{2 \times 15000 \times 2500}{16}} = 2165 \text{ units}$$

$h = 20\% \times 80 = 16$

$D = 15000$

$S = 2500$

$C = 80$

(ii) Number of annual orders

$$N = D/Q = \frac{15000}{2165} = 7 \text{ orders}$$

(iii) Reorder level (ROL)

ROL = Daily demand x lead time

$$\frac{15000}{300} \times 7 = 350$$

NB: Incase the company maintains safety stock, ROL =

ROL = (Daily demand x lead time) + safety stock.

(iv) COPE = Actual total cost − optimal cost

Total cost = $DC + D/Q S + Q/2 h$

$$15000 \times 80 + \frac{15000}{2165} \times 3000 + \frac{2165}{2} \times (18\% \times 80) = 1236588$$

Optimal order Level $= \sqrt{\frac{2DS}{h}} = \sqrt{\frac{2 \times 15000 \times 3000}{18\% \times 80}} = 2500$

Optimal total cost

$15000 \times 80 + \frac{15000}{2500} \times 3000 + \frac{2500}{2} \times 18\% \times 60 = 1236,000$

COPF = 1236580 − 1236000 = 588

August 2022 Q 46

Annual demand = $\frac{21600000}{60} = 36000$

D = 36000

C = 60

h = 15% × 60 = 9

S = 240

(i) $EOQ = \sqrt{\frac{2DS}{h}} = \sqrt{\frac{2 \times 36000 \times 240}{9}} = 1386$ units

(ii) $N = D/Q = \frac{36000}{1386} = 26$ orders

(iii) ROL = Daily demand × lead time

$\left[\frac{36000}{365} \times 7\right] + 300 = 990$ units

(iv) EOQ with discount

Steps followed

1. Compute total inventory cost with no discount
2. Compute total inventory cost with discount
3. Compare the two costs and select the minimum.

Total cost with no discount

$TC = DXC + D/Q\,S + (Q/2 + 300)h$

$36000 \times 60 + \frac{36000}{1386} \times 240 + \left(\frac{1386}{2} + 300\right)9 = 2175,171$

Total cost with discount

EOQ/Q > 2000

C = 95% × 60 = 57

h = 15% × 57 = 8.55

$TC = 36000 \times 57 + \frac{36000}{2000} \times 240 + \left[\frac{2000}{2} + 300\right] 8 \times 5 = 2067435$

Comment: Accept the discount.

## Presence of discount

In business practice, there are 3 main form of discount:

- cash discount
- Trade discount
- Quantity discount

- For the purposes of inventory control, the relevant discount is the quantity discount.
- Discount makes purchase cost to reduce but it may increase the holding cost.
- Quantity discount is divided into 2 (i) Single discount
  (ii) Multiple discount