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A

PROJECT REPORT

ON

"INVENTORY MANAGEMENT"

UNDERTAKEN AT

"TATA STEEL LTD"

IN PARTIAL FULFILMENT OF POST GRADUATE DIPLOMA IN

PGDMEx-Global Logistics & Supply Chain Management

MIT SCHOOL OF DISTANCE EDUCATION, PUNE.

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YEAR 2023 – 2024

DECLARATION

I hereby declare that this project report entitled "*INVENTORY MANAGEMENT*" is a bonafide record of the project work carried out by me during the academic year 2023-2024, in fulfillment of the requirements for the award of POST GRADUATE DIPLOMA IN (PGDMEx-Global Logistics & Supply Chain Management) of MIT School of Distance Education.

This work has not been undertaken or submitted elsewhere in connection with any other academic course.

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To

The Director
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Respected Sir,

This is to request you to kindly exempt me from submitting the certificate from my organization for Project Work due to the reason mentioned below:

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.
Thanking you in anticipation of your approval to my request.

Regards

Student Name: Jayant Salkar
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Signature

ACKNOWLEDGEMENT

I would like to take this opportunity to express my sincere thanks and gratitude to Prof. Omkar Salvi of MIT School of Distance Education for giving me an opportunity to do my project work and it has indeed been a great learning and enjoyable experience.

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At last but not least, I am thankful to my Family and Friends for their moral support, endurance and encouragement during the course of the project.

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ABSTRACT

Inventory management plays a crucial role in optimizing operational efficiency and maintaining profitability for businesses across various industries. This abstract explores the types, scope, objective, data analysis & interpretation etc involved in inventory management. It discusses the significance of accurate demand forecasting, efficient procurement practices, and streamlined inventory control processes in minimizing costs and maximizing customer satisfaction. By implementing robust inventory management practices, organizations can enhance their competitive advantage, mitigate stock outs, reduce excess inventory, and ultimately drive sustainable growth and success.

Inventory management system which is helpful for the business operators, where shopkeeper keep the records of purchase and sales. Mismanaged inventory means disappointed customers, too much cash tied up in slower sale and warehouses. This inventory is eliminate paper work, human faults , manual delay and speed up process. This inventory management system will have the ability to track sales and available inventory, tells a shopkeeper when it’s time to reorder and how much to purchase. Inventory management system is windows application developed for windows operating systems which focused in the area of inventory control and generate. The software is made up of two parts: The frontend and the database.

Keywords: Database, Inventory, public, software.

TABLE OF CONTENTS

CHAPTER-I

INTRODUCTION

INTRODUCTION:

Every enterprise needs Inventory for smooth running of its activities. It serves as a link between production and distribution process. There is generally a time large between the recognition of a need and its fulfillment. The higher the requirements for inventory. The unforeseen fluctuations in demand and supply of goods also necessitate the need for future price fluctuations.

INVENTORY MANAGEMENT plays a vital role as a part of financial management. As most of the capital is locked up in the form of Inventory in firm. That Inventory must be managed efficiently in order to reduce the Investment in the Inventory. So the management of Inventory has also been given a great importance. The purpose of INVENTORY MANAGEMENT is to ensure availability of materials in sufficient quantity as & when required and also to minimize Investment in inventories.

There are three types of inventories. "Raw materials, work-in-process, and finished goods. Raw materials are materials and components that are inputs in making the final product. Work-in-process also called stock-in-process, refers to goods in the intermediate stages of production. Finished goods consists of final products that are ready for sale. While manufacturing firms generally hold all the three types of inventories, distribution firms hold mostly finished goods.

Inventories are stock of the product a company is manufacturing for sale and components that make up the product. The various forms in which inventories exist in a manufacturing company are raw materials, work-in-process and finished goods.

"Raw materials are those basic inputs that are converted into finished product through the manufacturing process. Raw materials inventories are those units which has been purchased and stored for future production. Work-in-process inventories are semi manufactured products. They represent products that need more work before they become finished products for sale. Finished goods

inventories are those completely manufactured products. Which are ready for sale

Types of inventories:

1. **Raw materials:** Raw materials is a very important and inevitable factor of production. In includes physical commodities used to manufacture the final product.
2. **Work-in-progress:** Work in progress inventory are semi-manufactured products, the products that needs more work before they are contented of finished products for sales, in other words, goods partially worked on but not fully completed are called work in progress.
3. **Finished goods:** Inventory of finished products are the stock of goods which are ready for sales. Stock of finished goods is required for smooth marketing operations of the products.

Inventory management depends on certain risks and cost. Therefore, the inventory manager should try to maintain optimal size of inventory without disturbing the production and sales needs.

The objectives of inventory management are mentioned below:

1. **To supply the required materials continuously**: There should be a continuous availability of materials in the factory or finished goods for trade. The main objective of inventory management is to maintain required inventory so that production and sales process run smoothly.
2. **To minimize the risk of under and over stocking of material:** If a company keeps inventory without proper analysis, there will be a chance of overstocking, which will increase the cost of carrying the inventory or under stocking of inventory that create problem in smooth operation of a business. So one of the main objectives of the inventory management is to minimize the risk caused due to under and over stocking of inventory.
3. **To maintain systematic record of inventory:** Management needs different information regarding inventory for planning and decision-

making. A systematic record of inventory helps in providing such information to the management. It also assists to evaluate the current inventory management policy.

4. **To reduce losses, damages and misappropriation of materials:** Inventory management aims to reduce or remove the losses and misappropriate materials. This is done by maintaining the proper stocks of materials with utmost care.
5. **To minimize the cost associated with inventory:** The proper maintenance of the information regarding inventory helps to make decisions like whether to take discounts or not, the size of order to be placed, when to order etc. the total cost associated with inventory may be minimized by analyzing the lot size to be acquired, the offer of discount on variable lot size and the timing of order. Such analysis helps to reduce the unnecessary inventory in inventories.
6. **To make stability in price:** An effective inventory management system minimizes the effects of regular price fluctuation. This in turn helps to gain the stability is selling price.

NEED FOR THE STUDY:

Materials are equivalent to cash and they make up an important part of the total cost. It is essential that materials should be properly safeguarded and correctly accounted. Proper control of material can make a substantial contribution to the efficiency of a business. The success of a business concern largely depends upon efficient purchasing, storage, consumption and accounting.

- The cost of production is increased recently due to the wide usage of TATA STEEL LIMITED company products.
- As requirement of raw material is increased there is a need for the effective maintenance of INVENTORY MANAGEMENT.

"For every industry the Inventory plays a vital role". Better Inventory control leads to better capital usage .The Company should look after the Inventory effectively which results in optimum level of raw materials & finished goods that will smooth in production process.

Every industry has to maintain the Inventory in an optimum quantity. It should not be too high (or) too low. Which leads to the improper management of Inventory. Too high Inventory causes increase in costs& the capital of the firm will be blocked too low Inventory causes serious fluctuations in manufacturing process. So there is a need for study of INVENTORY MANAGEMENT in **TATA STEEL LIMITED**.

"Inventory plays a vital role hence the study of INVENTORY MANAGEMENT in TATA STEEL LIMITED, has been selected for the project work."

SCOPE OF THE STUDY:

- The study is done on inventories held by manufacturing division of **TATA STEEL LIMITED** The scope of the study includes the ABC Analysis of Raw Materials, WIP and Finished Goods for four financial years.
- This study provides insight to the management of High Value items and also brings attention of management towards movement of 'A' class items over period of 5 years.

OBJECTIVES OF THE STUDY:

- To learn various INVENTORY MANAGEMENT procedures followed at STEEL Industry of **TATA STEEL LIMITED.**
- To review the ABC analysis and understand the impact of business dynamics on inventory.
- To evaluate the inventory management practices of **TATA STEEL LIMITED.**
- To offer suitable suggestions for the improvement of inventory management practices.
- To review whether the company maintains a large size of inventory for efficient and smooth production and sales operation.
- To maintain a minimum investment in inventories to maximize profitability.
- To ensure a continuous supply of raw materials to facilitate uninterrupted production.

COLLECTION OF DATA:

Sources of data:

The study is based on both primary data and secondary data.

Primary data:

The information relating to study is collected with the collected with the cooperation of management of the company, who permitted me to carry on the study and providing with requisite data through oral interviews with the employees.

Secondary data:

Since the study is aimed at the financial aspects of **TATA STEEL LIMITED**, the whole data has been gathered from

- Reports of the company.
- Brochures of the company.
- Library books.
- The period Annuals of the study has been taken from 2019 to 2023.

LIMITATIONS OF THE STUDY:

- Since the study covers only Manufacturing division of the company, it may not represent the overall scenario of the company.
- Project duration of time is not sufficient.
- One of the factors are the study was the lack of availability of sample information.
- The information is mostly depended upon secondary data.
- Main limitation is due to their busy schedule the employees in the organization are unable to spend their time with me.

CHAPTER-II

REVIEW OF LITERATURE

INVENTORY:

A tangible property held, finished goods, work in process, raw materials including maintenance and consumables.

MEANING OF INVENTORY:

The inventory refers to the stock pile of the product a firm offering for sale the components that make up the product. In other words, inventory is composed of assets that will be sold in future in the normal course of business operations. The assets which firms store as inventory in anticipation of need can be classified into

1. Raw materials
2. work-in-progress(semi finished goods)
3. finished goods

1. **RAW MATERIALS:-** Inventory contains items that are purchased by the firm from others and are converted into finished goods through the manufacturing process. They are important inputs for the final product.
2. **WORK-IN-PROCESS:-** Inventory consists of items currently being used in the production process. They are normally, partially or semi-finished goods that are at various stages of production in a multi stage production process.
3. **FINISHED GOODS:-**It represents final or completed products which are available for sale, the inventory of such goods consists of items that have been produced but are yet to be sold. The job of the final manager is to reconcile the conflicting view points of the various functional areas regarding the appropriate inventory levels in order to fulfill the over all objectives of maximizing the owner's wealth.

IMPORTANCE OF INVENTORY:-

Inventory plays cardinal role in every organization. The profit of the organization mainly depends on the inventory. Inventory is the second largest value in the organization. It is the liquid asset and the current asset of the organization. Inventory storage is in important activity in the organization.

OBJECTIVES OF INVENTORY MANAGEMENT:

The objectives of the inventory management consist of two counter balancing parts:

- To maximize the firms investment in inventory
- To meet a demand for the product by efficiently organizing the firms production and sales operation.
- Ensure a continuous supply of raw materials to facilitate uninterrupted production.
- Minimize the carrying cost and time.

These two conflicting objectives of inventory management can also be expressed in terms of cost and benefits associated with inventory. An optimum level of inventory should be determined on the basis of the trade off between cost and benefits associated with the levels of inventory.

THE MAIN AIM OF INVENTORY MANAGEMENT

The main aim of inventory management is that they should avoid excessive and inadequate levels of inventories &to maintain sufficient inventory for the smooth production &sales operations effort be made to place an order at the right time with the right source to acquire the right quality at the right place &quantity.

- Ensure a continuous supply of raw materials to facilitate uninterrupted production.
- Maintain sufficient stocks of raw materials in periods of short supply, anticipated price customer service.
- Minimize the carrying and time.

Causes of inventory:

- External causes - customers, suppliers etc.
- Internal causes - market, policy, production and SCM.

Problem with high inventory:

- Interests, insurance costs.
- Quality deterioration.
- Wear and tear.
- Storage and pilferage.

Inventory turnover ratio:

- ITR=cost of production/inventory
- Higher ITR=low inventories
- Low ITR=high inventories

High inventory reasons:

- Production
- More low volume products
- Large cycle campaign product
- Non-moving products

Marketing:

- Uncertainty of orders
- Deviating sales forecast

Supply chain management:

- Improper planning
- Excess/short RM supply.

Suggestions:

- Flexible production plans with tight monitoring.
- Min & max inventory levels and their up to date revision.
- Cost benefits analysis on carrying costs.
- Review and disposal of non-moving inventory.
- Reliability should improve.
- Dynamic approach is essential.
- Coordination with market and plants.

- Adherence to commitments and time-to-time review is must

Selection of site:-

The following are the chief considerations which should determine the selection of a site:

- The site will be connected with road and rail, or if there is river transport, with water transport.
- The existence of facilities for disposal of water or effluent water is important. For this purpose some times special arrangements are necessary though some times it may be possible to use existing waste land. Health authorities will naturally have a say in the matter.
- The available land should be sufficient for purpose of the unit. In addition to factory buildings, it is often necessary to provide houses for the staff and workers.

STORES, SPARES AND PURCHASES:

- Store keeping.
- Store system.
- Stores operation.
- Methods of pricing the material issues.
- Receiving section and issue department.
- Purchase department
- Stores and spares.
- Purchasing system.
- Inventory.

STORE KEEPING:

It is serving facility, inside of an organization responsible for proper storage of the material and then issuing it to respective department on proper requisition. those items, which are not in use for some specific duration example spare parts and the raw materials, are called stores and the building or space where these are kept is known is store room.

According to Maynard "the duties of stock keeping are i.e. to receive materials are to protect them while in storage from damage and unauthorized removal, to issue the materials the right quantities at the right time to the right place and to provide these service promptly at least cost".

It is an establishment fact that more government of the current assets are invested in stores. Thus for efficient and economic utilization of funds the importance of store cannot be ignored.

FUNCTIONS OF STORE KEEPING:

The main function of store keeping can be outlined as

- Receiving of goods in stores against damage and pilferage.
- Custodian of goods in stores against damage and pilferage
- Effective utilization of stores space.
- To provide service to the organization in most economic way.

OBJECTIVES OF STORE KEEPING:

- Easy location of the items in store.
- Proper identification of items.
- Speed issue of material, Efficient utilization of space

FACTORS OF PLANT LOCATION:

Primary factors:-

- Raw material
- Market
- Fuel and power
- Transport
- Labour

Secondary factors:-

- Industrial atmosphere
- Special advantage of a place
- Soil and climate
- Personal factors
- Historical factors
- Political stability

Stages in production control:-

- Planning
- Routing
- Scheduling
- Loading
- Dispatching
- Inspection

Advantages of production planning and control:-

- Efficient service
- Avoidance of rush orders
- Avoidance of bottlenecks
- Inventory control
- Economy in production time
- Equipment utilization

Types of layout:

- Product or line layout
- Process or functional layout
- Combined layout

Factors in plant layout:

- Basis managerial policies and decisions
- Nature of plant location

- Type of industry and processes

Economies in production:

- Use of automatic machinery
- Division of labor
- Utilization of by-products
- Timely and economical repairs and maintenance.

Approach:

The importance of an integrated approach of material management with in the frame work of the Indian environment and presents a comprehensive coverage of all aspects of the subjects, such as the operational details of stores system and procedures and modern mathematical concepts also featured. Since the theory is based on the practical experience and research projects, it fulfills the needs for authentic literature in the field of materials management.

Purpose of stores:

Store plays a vital role in the operation of a company. It is in direct touch with the user departments in its day-to-day activities. The most important purpose served by the stores is to provide uninterrupted service to the manufacturing divisions. Further, stores is often equated directly with money, money is locked up in the stores.

The function of stores can be classified as follows:-

- To receive raw materials, tools, equipments and other items and account for them.
- To provide adequate and proper storage and preservation to the various items.
- To meet the demands of the consuming departments by proper issues and account for the consumption.
- To minimize obsolescence, surplus and scrap through proper codification, preservations and handling.
- To highlight stock accumulation, discrepancies and abnormal consumption and effect control measure.

- To ensure good house keeping so that material handling, materials preservation, stocking, receipt and issue can be done adequately.

In India, owing to positions, 4 to 6 months inventories are not uncommon 77 and, in fact, for certain imported items, it could be as high as 24 month's stock. In this context, stores management assumes greater importance.

Stores leader:-

The stores leader is very important because this facility the calculations of the value of goods used for production purpose of materials, finished goods. There are several methods for calculating the issue price of the materials.

1) **FIFO:** Under this method is first issued from the earliest consignment on hand and priced at which that consignment was placed in the stores. In other words materials received first are issued first. This method is most suitable in times of falling prices because the issue price of materials to be jobs work orders will be high while the cost of replacements of materials will be low.
2) **LIFO:** The issues under this method are priced in the reverse order of purchase i.e.. The price of the latest available consignment is taken. This method is sometimes known as the replacement cost method because materials are issued at the current cost to work orders expect when purchases were long ago. This method is suitable in times of raising prices because material will be issued from latest consignment at a price which is closely related to the current price levels.
3) **Base stock method:** Each concern always maintains a minimum quantity of material in stock. This minimum quantity is known as safety or base stock and this should be used when an emergency arises. The objective of this method is to issue the material according to the current prices.
4) **Average method:** In this method stock is divided by the quantity.
5) **Market price:** The issues are made at the market prices.
6) **Inflated prices:** This method is used for any wastage in the materials.

Location and layout:

More often than not, in the matter of locating the stores, materials management is rarely consulted. The normal practice is to locate the stores near the consuming departments. This minimizes handling and ensures timely dispatching stores layout, governing criteria are easy movement of materials, good house keeping, and sufficient space for men and materials handling equipments, such as shelves, racks, pallets and proper preservation from rain, light and other such elements.

These problems are more important in the case of items that have a limited shelf life. Other important factors governing the location are the number of users and their locations, the volume and the verity of goods to be handled the location of the central receiving section and accessibility to modes of transportation such as rail or road. Since stores have to be nearest to the sugar, largest organizations usually have stores near consuming department, whereas receiving is done centrally

Items of common usage are stocked in the central stores so that inventory is kept at an optimum level. These factors are considered at the planning level of layout. In the case of warehouses stocking finished goods, factors such as proximity to ports, railway lines, quality of roads, availability of power, etc., become quite important. It is also important that the stores are constructed with a futuristic orientation, so that sufficient flexibility for expansion needs is inbuilt. The activities of receiving the goods, stocking in appropriate locations, material handling and issue must be done swiftly and economically. The stores building have adequate facilities for preservation of stores.

Sometimes facilities, such as cold storage, heating equipments, air conditioning and similar facilities may be required. These should be planned in advance. Comfortable working conditions must be provided to the stores personnel to get maximum efficiency and morale.

The important factors in the design of stores building can be summarized as follows:

Lighting:

Clear and adequate lighting is a must for a work environment. Lighting effects can be accentuated through a judicious choice of colors for the walls. For stores personnel who work day in and day out in the stores receiving, checking, stocking, handling and issuing goods, a pleasing environment goes a long way in reducing monotony. Any attempt to reduce these facilities will prove false in economizing in the long run.

Safety:

This factor is perhaps the most important aspects. In stores a large volume of goods are handled every day. Accidents considerably reduce the morale and effectiveness of the system. The following measures are necessary if accidents are to be checked:

- Safety consciousness should be instilled in the minds of stores, personnel through training programmers, visual aids and literature.
- Safety appliances, such as goggles, hand gloves, etc.., must be provided and their use must be encouraged.
- Good housekeeping is essential. This means that gangways must be clean, adequately wide so that movement of forklifts, trolleys and industrial tractors is smooth. Stocking must be appropriate locations so that handling is minimum.
- All stores equipment must be kept in good order. This includes adequate maintenance practice with regard to forklifts, overhead cranes, trolleys, conveyors, etc. operation must be trained in safety so that safety precautions are not over looker.
- Healthy competition can be stimulated by installing “safety awards” and cash prizes which bring recognition to the concerned stores personnel for safety practices. This also motivates other to practice safety.
- Provision of fire fighting facilities is necessary especially where inflammable materials are stored and handled. In fact large organizations have a well maintained fighting equipment.
- Keep the stores in preparedness. this has in the run reduced losses and reduced insurance expenses, fire extinguisher, fire escapes, alarms and

sprinklers must be available the personnel should be familiar in handling them.

- Other factors which merit attention include provision of toilets, routine maintenance equipments, safe electrical warnings, etc..,

Cost aspects and productivity:

It is covered that every cubic meter of space must be utilized by stocks for high efficiency. Very often such stocking may drastically cut the speed of materials movements and create bottlenecks apart from affecting overall safety. Costs involved in stores can be analyzed under two heads, viz.., fixed and variable. Fixed costs are to be incurred irrespective of the utilization of stores space. They include money spent on land and buildings, rent interest, repairs, maintenance, insurance, etc. Variable costs vary with the volume through output. They consists of handling cost, damages, deterioration, obsolescence, etc. obviously when the throughout or the volume goods handled is high, The total cost per tone is low. This should be the aim of the stores manager in order to optimize the costs in stores.

Problems and development:

It is an unfortunate fact that stores management has been regulated as a critical function. In the gamut of material management, a store is considered as the least glamorous and it never attracts talent. It is forgotten that the stores manager is probably the custodian of the single largest group of current assets and plays a pivotal role in ensuring smooth production besides assisting purchase activities through timely support. This is the major problem and challenge that stores manager faces today.

Many decisions in stores management, such as selection of tracks, bins, handling equipment, safety practices, codification, training personnel and accounting, call for considerable, sick and an ability to coordinate with other departments as well as with outsides agencies. These aspects should be highlighted and appreciated so that the stores function is given due to importance. Other areas in stores, such as records keeping, movement analysis to reduce obsolescence, surplus and damage are critical

to the profitable operation of the firm and the stores manager faces challenges in the areas as well.

In many organizations the scrap yard also comes under control of the stores manager. This is an entirely new responsibility calling for the ability to maximize returns on the disposal of scrap. The chief stores officer has under him separate officers for the functions of receipt, issuem, kardex and sub-stores.

Besides coming into contact with the production, purchase maintenance, inspection and finance departments within his organization, he has to come into contact with the outsiders like suppliers, transport carriers and bankers. In order to meet such challenges the importance of the stores function should gradually gain momentum and qualified engineers should be posted as chief stores officers reporting to the materials manager.

Role of financial manager in inventory management:

Optimum level of inventory and finding ensures to the problems of EOQ are the recorder point and the safety stock. These techniques are very essential to economize the use of minimizing the total inventory cost. The techniques of inventory management are very useful in data mining. The cases the board frame works for managing inventories.

To the majority of the companies, inventory represents a substantial investment. Thus the goal of wealth maximization is related to the financial manager has an important role to play in the management of inventory.

Although it is not his operating responsibility to control inventory. The financial should see that only an optimum amount is invested in inventory. He should be familiar with in inventory control techniques and ensure that inventory is managed well. Effect would be reduce inventory investment and increase the firm's prospects of making profits.

INVENTORY CONTROL:

Inventory control renders to "the process whereby the investment in materials and parts carried in stock is regulated within predetermined limits set in accordance with the inventory policy established by the management. The inventory control is activity oriented process whereas inventory control is the management process and the later is the firm's setup to be followed by the former.

Inventory control refers to a planned method of purchasing and storing the material at lowest possible cost without affecting the sales scheduled.

Inventory control therefore, is a scientific method of determining what, when and how much to purchase and how much to stock for a given period of time.

The needs of inventory control:

The rewards of inventory control system cannot be over looked in the Indian context the idea behind this is,

- Conserving valuable foreign exchanges.
- Release of capital
- Reduction in cost

The primary object of inventory control is:-

- To minimize the idle time caused by shortage of inventory and inventory availability of inventory.
- To keep down capital investment in inventories. Inventory carrying cost and obsolescence losses.

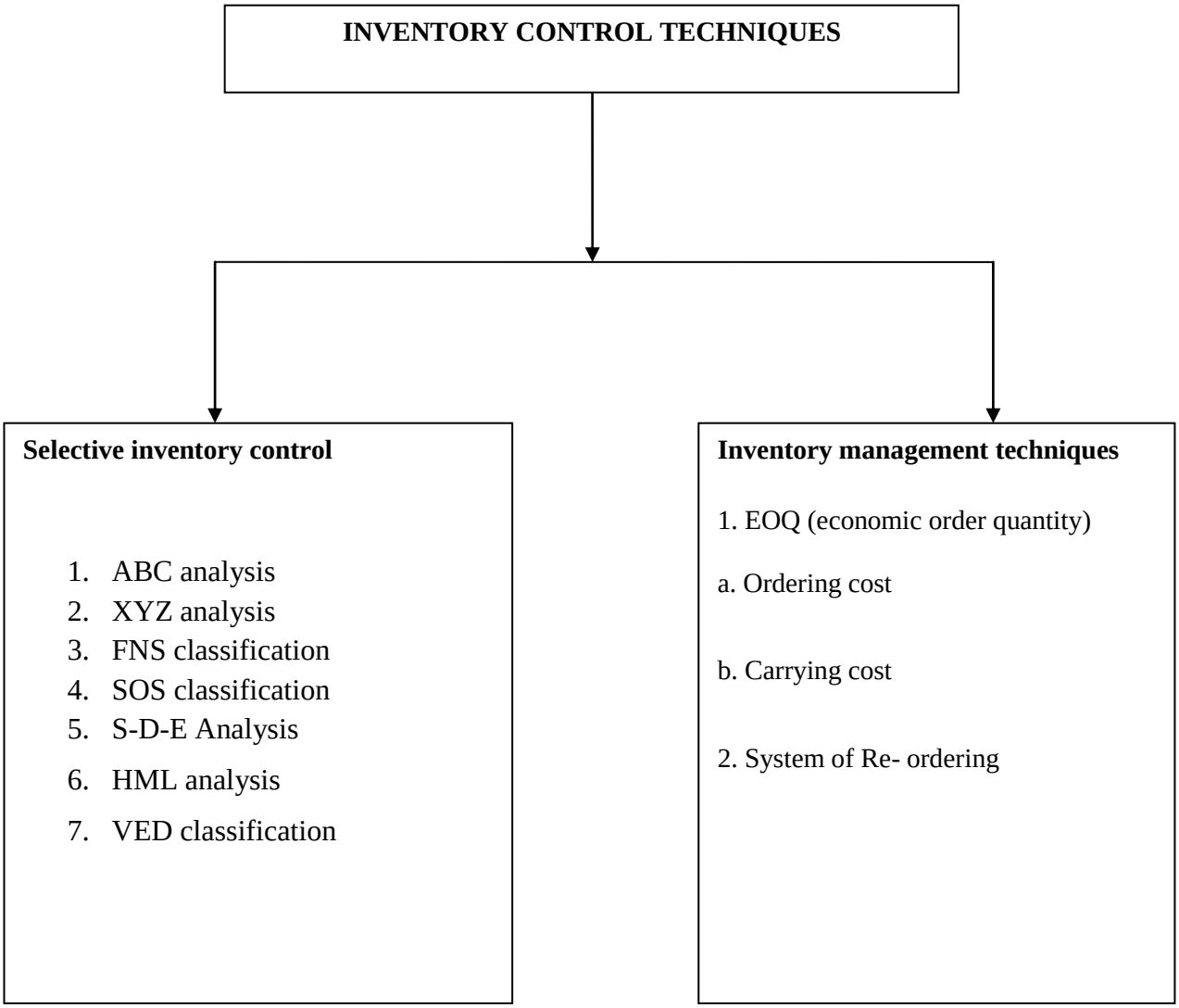

INVENTORY CONTROL TECHNIQUES
Selective inventory control
1. ABC analysis
2. XYZ analysis
3. FNS classification
4. SOS classification
5. S-D-E Analysis
6. HML analysis
7. VED classification
Inventory management techniques
1. EOQ (economic order quantity)
a. Ordering cost
b. Carrying cost
2. System of Re- ordering

Fig 2.1

ECONOMIC ORDER QUANTITY:

One of the inventory management problems to be resolved is how much inventory should be added when inventory is replenished. If the firm is buying raw materials, it has to decide lots to in which it has to be purchased on cash replenishment.

$$\textbf{EOQ(Economic Order Quantity)} = \frac{\sqrt{2} * \textbf{quantity required} * \textbf{ordering cost}}{\textbf{Carrying cost}}$$

If the firm is planning production as per schedule. These problems are called order quantity problem and task of the firm is to determine optimum inventory level involves two types of costs

1. Ordering cost.
2. Carrying cost.

The economic order quantity is that inventory level, which minimizes the total of ordering and carrying costs.

Ordering costs:-

The term ordering cost is used in case of raw materials (or supplies) and includes the entire costs of acquiring raw materials. They include costs incurred in the following activities. requisitioning, purchase ordering, transport receiving, inspecting and storing(store placement), ordering cost increase in proportion to the number of orders placed the critical and staff costs, however, don't vary in proportion to the number orders placed, and one view is that so long as they are committed cost they need not to be revoked in computing ordering cost.

Carrying costs:

Cost incurred for maintaining a given level of inventory are called carrying cost, they include storage, insurance, taxes, deterioration and obsolescence's.

ABC Analysis:

ABC analysis is one of widely used inventory control tool. Under this we have to classify materials according to their importance and concentrate more on critical items. Importance of any item arises due to the two factors namely, consumption values and critically in use. Classification of materials according to importance has its basis on the promise “vital few and trivial many”.

The classification based on consumption value is called ABC analysis and the classification based on the critically of the items is called VED analysis (vital essential and desirable).periodical consumption values are used as the basis for VED analysis. ABC is said to denote “always better control”, the method of classification of material is also known as “selective method control”. The basis of analyzing the annual consumption cost (or usage cost) goes after the principle “vital few and trivial many”.

Items held in the stores can grouped into class A,B and C respectively based on their annual consumption values. It has been found in a large number of organizations that about 20% of the items contribute to 70% of the annual consumption value, 30% of the number of the number of items contributes about 20% of the annual consumption value and the remaining 50% of the items contribute 10%of the annual consumption value.

Hence consumption value need to be controlled at the highest level and these are the A items. The control of bottom 50% of the items that contribute only 20% of the annual consumption value, that are denoted as C items can be delegated to the lowest decision making levels while, the middle B items can be controlled by the middle levels of personnel.

"The following figures bring out clearly the concept of ABC analysis".

Category Value	Item 10%	% of annual Consumption
A item	20	70
B item	30	20
C item	70	10

Table 2.1

The advantage of ABC method of inventory control is follows:
It becomes possible to concentrate all efforts in areas which need genuine efforts. This method produces better results and involves minimum control. In the case of an items careful attention is paid at every stage i.e., estimates of requirements, purchasing safety stocks, receipts, inspection and issues.

A close watch on high consumption items and their progress of replenishment etc, maintained. In the case of C items which are numbers and at the same in expensive are loosely controlled.

The items fall under B category may be dispensed within the record keeping system. This will help in saving time, money and labor without endangering production schedule, it is most effective and economical method as it is based on the selective method.
It helps in placing the orders, deciding the quantity of purchasing safety stocks etc. Thus saving the organization from the unnecessary stocks outs or surpluses.

VED Analysis:

VED analysis represents classification of items based on critically the analysis classifies the items into 3 groups called vital, essential, desirable "vital" category encompasses those items for want of which production would come to halt." essential" group includes items whose stock out is very "desirable" group comprises of items which do not cause any immediate loss of production would come is high. "Desirable" group comprises of items which do not cause any immediate loss of

production or their stock out entail nominal expenditure and causes minor disruption for a short duration.

HML analysis:

HML analysis is the price based analysis. This analysis is generally used for control of spares. The items m under this analysis are classified into 3 groups which are called “high”, “medium”, “low”. To classify, items are listed in the descending order of their unit price.

Ex: - the management may decide that all items of unit price above Rs 1000 will be of ‘H’ category. Those with unit price between Rs 100 to Rs 1000 will be of ‘M’ category and those having unit price below Rs 100 will be of ‘L’ category.

F-S-N ANALYSIS:

F-S-N analysis is based on the consumption figures of the items. The items under this analysis are classified into 3 groups.

- F-fast moving
- S-slow moving
- N-non moving

To conduct the analysis the last date of receipt or the date of issue whichever is later taken into account and the period, usually in terms of number of months that has elapsed since the last movement is recorded.

X-Y-Z ANALYSIS:

X-Y-Z analysis is based on value stock on hand. Items whose inventory values are high are called ‘X’ items those inventory values are low are called ‘Z’ items and ‘Y’ items are which have moderate inventory stocks. Usually X-Y-Z analysis is used in conjunction with either ABC analysis or HML analysis.

S-OS ANALYSIS:

S-OS analysis is based on seasonality of the items and it classified the items into 2 groups.

- S- seasonal
- OS-off seasonal

S-D-E ANALYSIS:

S-D-E analysis is based on problems of procurement namely,

- Non availability
- Security
- Longer lead time
- Geographical location of suppliers
- Reliability of suppliers etc

S-D-E analysis classifies the items into 3 groups called “scare”, “difficult”, and “easy”. The information so developed is then used to decide purchasing strategies. “Scare” classification comprises of items which are in short supply imported through government agencies. “Difficult” classification includes those items which are available indigenously but are not easy to produce. “Easy” classification covers those items which are readily available.

LEVEL SETTING:

In order to have proper control on materials the following levels are set:

- Re-order level
- Ordering level
- Minimum level
- Maximum level
- Average stock level
- Danger level
- Safety stock level

Re-order level:

It is the point at which if stock of a particular material in store approaches the storekeeper should initiate the purchase requisition for fresh suppliers of the material. This level is fixed somewhere between the maximum and minimum levels in such a way that the difference of the quantity of the material between the re-ordering level and the minimum level will be sufficient to meet the requirements of production up to the time fresh supply of the material is received.

"Reorder level can be calculated by applying the following formula":-

Ordering level = Minimum level + Consumption during the time required to get fresh delivery

Another formula given by WHELDON in his book 'cost accounting' is follows:

Reordering level = Maximum consumption * Maximum reorder level period

Ordering level:

This is the quantity of stock fixed between the maximum and minimum level of stock. When this level is reached, it becomes the duty of the store-in-charge to replenish the stock within reasonable time. This level is usually a little higher than the minimum level. In order to be prepared for such emergencies as abnormal consumption delay in delivery of new supplies etc.,

While fixing this level following points are taken into consideration:-

- Time required for obtained fresh suppliers.
- Possible unexpected requirements which cannot be avoided.
- Possible unexpected delays in getting fresh suppliers because of rains war, about unrest etc.

Minimum level:

Formula level represents the level beyond, which the stock in hand is not allowed to exceed. This is because: If the exceeds this level, it will

- Involves more investment
- Requires more space for storages
- Amount to more wastage because of handling, spoilage, obsolescence
- Involves more carrying cost.

Excess stock will increase the cost of storage, thereby increasingly selling cost. Excess stock will involve unnecessary blockade of working capital and prevent its availability for a more profitable use. Stock in excess will prevent the management from taking advantages of price fluctuation and favorable market condition.

The fixation of maximum level depends on the following factors:-

- Rate of consumption of the material
- Money available
- Time required to obtain deliveries
- Storage space available
- Economic order quantity
- Market conditions, seasonality and price fluctuation
- Possibility of loss due to deterioration

The following for the calculation of maximum stock level given by WHELDON is as follows:

Maximum stock level = Re-ordering + Re-ordering – quality
(Minimum consumption X minimum re-ordering period)

Average stock level:

The average stock is calculated by the following formula

Average stock level = minimum stock level + ½ of re order quantity of ½ minimum stock level + maximum stock level)

Danger level:

This means levels at which normal issues are made only under specific instructions. The purchases officer will make special arrangements to get the materials which reach at their danger level so that the production may not stop due to storage of material danger level = Average consumption X maximum re-order period for emergency purchase.

Safety stock level:

This level is below the minimum level and represents the stage at which emergency and immediately steps have to be taken for getting the stock replenished

CHAPTER-III

COMPANY PROFILE

COMPANY PROFILE

The world of Tata Steel is one without boundaries - growing, changing and challenging, a world that embraces different skills, continuous innovation, sustainable growth and a better quality of life.

We touch the lives of millions of people across the world every day with the steel that we produce. And it is highly likely that Tata Steel has affected your life today, though you may not know it.

From the vehicle you drive, to the house you live in; from the bridges you cross, to the hand tools that you use; we strive to deliver unparalleled quality through our customised value-added solutions to make your life easier.

This is made possible by our commitment to a culture of continuous improvement, through which we drive operational excellence in processes, products and people.

Tata Steel is currently the world's second-most geographically diversified steel producer. We are one of the few steel operations that are fully integrated – from mining to the manufacturing and marketing of finished products.

Continuous improvement in our product and service portfolio, along with success in value creating initiatives for customers, allows us to serve global growth markets. Today, we operate in 26 countries and have a commercial presence in over 50 countries with employees across five continents. And the numbers are growing.

Our Raw Material operations are spread across India and Canada which help us to be self-sufficient in steel production. Key manufacturing functions are performed by the raw materials and iron-making groups, while Shared Services provides maintenance support for a smooth production. In India, our downstream business activities are structured into strategic business units such as Ferro-alloys and Minerals, Tubes, Wires, Bearings, Agrico, Industrial By-products Management & Tata Growth Shop.

INDIA

Tata Steel was established in India as Asia's first integrated private steel company in 1907. With this, we also developed India's first industrial city at Jamshedpur. Today, we are among the leading global steel companies. Our annual crude steel capacity across Indian operations is nearly 13 MnTPA and we registered a turnover of US $7889 Mn in FY 2018. We also set up our second greenfield steel plant in the eastern state of Odisha; commissioning the first phase (3 MnTPA) of 6 MnTPA capacity in 2016. We possess and operate captive mines that help us maintain cost-competitiveness and production efficiencies through an uninterrupted supply of raw material. This is how we ensure that we remain the lowest cost producer of steel in Asia.

EUROPE

Tata Steel is the second largest steel producer in Europe with a crude steel production capacity of over 12.1 MnTPA. We established our presence in the European continent after acquiring Corus in 2007. The manufacturing facilities in Europe comprise hubs (Strip Products Mainland Europe, Strip Products UK and Downstream Operations) and integrated businesses (Plating and Cogent Power). We have two integrated (blast furnace-based) steel-making sites in Ijmuiden, the Netherlands and Port Talbot, South Wales respectively. Other

facilities across Europe produce a variety of special steels, ultra-pure re-melted steels and various rolling and coating lines.

Visit website: www.tatasteeleurope.com

SOUTH EAST ASIA

Tata Steel's operations in South-East Asia began in 2004 with the acquisition of NatSteel, Singapore. The operations are run by NatSteel Holdings Pte Ltd., a wholly-owned subsidiary of Tata Steel. In 2015, we acquired a majority stake in Thailand-based steelmaker Millennium Steel, which strengthened our South-East Asian operations. We are concentrating our efforts in the region to grow our value-added products and services portfolio, while strengthening our key steel operations in Singapore, Thailandand China.

VISION

We aspire to be the global steel industry benchmark for Value Creation and Corporate Citizenship.

We make the difference through:

- Our People

Fostering teamwork, nurturing talent, enhancing leadership capability and acting with pace, pride and passion

- Our Offerings

  Becoming the supplier of choice, delivering premium products and services, and creating value for our customers

- Our Conduct

  Providing a safe workplace, respecting the environment, caring for our communities and demonstrating high ethical standards

- Our Policies

  In adherence to the Tata Code of Conduct, Tata Steel's policies pertain to active sets of principles in different areas of operation that help bring uniformity in processes by clearly defining the company's approach

- Our Innovative Approach

  Developing leading-edge solutions in technology, processes and products

MISSION

Consistent with the vision and values of the founder Jamsetji Tata, Tata Steel strives to strengthen India's industrial base through effective utilization of staff and materials. The means envisaged to achieve this are cutting edge technology and high productivity, consistent with modern management practices.

Tata Steel recognizes that while honesty and integrity are essential ingredients of a strong and stable enterprise, profitability provides the main spark for economic activity.

Overall, the Company seeks to scale the heights of excellence in all it does in an atmosphere free from fear, and thereby reaffirms its faith in democratic values.

Ratan N Tata

Mr Ratan Naval Tata is the Emeritus Chairman of Tata Sons, Tata Industries, Tata Motors, Tata Steel and Tata Chemicals. He has been the Chairman of Tata Steel, Tata Motors, Tata Steel, Tata Consultancy Services, Tata Power, Tata Global Beverages, Tata Chemicals, Taj Group and Tata Teleservices. During his tenure, the Tata Group's revenues grew manifold, totalling over $100 billion in 2011-12.

Mr Tata joined the Tata Group in 1962. After serving in various companies, he was appointed Director-in-Charge of the National Radio Electronics Company Limited in 1971. In 1981, he was named Chairman of Tata Industries and was responsible for transforming it into a group strategy think-tank, and a promoter of new ventures in high technology businesses.

Mr Tata currently serves on the board of directors of Alcoa and is on the international advisory boards of Mitsubishi Corporation, JP Morgan Chase, Rolls Royce and the Monetary Authority of Singapore. He is the Chairman of the Sir Ratan Tata Trust and the Sir Dorabji Tata Trust, two of the largest private sector-promoted philanthropic Trusts in India. He is the chairman of the Council of Management of the Tata Institute of Fundamental Research. He also serves on the board of trustees of Cornell University and the University of Southern California.

Mr Tata has received honorary doctorates from several universities in India and abroad. In 2008, the Government of India honoured Mr Tata with its second-highest civilian award, the Padma Vibhushan.

CHAPTER-IV

DATA ANALYSIS & INTERPRETATION

Data analysis & interpretation

Inventory turnover:

This ratio indicates the efficiency of the firm in selling its product. It is calculated by dividing the cost of goods sold by the average inventory.

$$\textbf{Finished good turnover} = \frac{\textbf{Cost of goods sold}}{\textbf{Average Inventory}}$$

Cost of sold goods = Opening stock + Purchases – Manufacturing Expenses – Closing Stock

$$\textbf{Average Inventory} = \frac{\textbf{Opening stock+Closing stock}}{\textbf{2}}$$

The average inventory is the average of opening and closing balances of inventory. In a manufacturing company inventory of goods is used to calculate inventory turnover.

The manufacturing firm's inventory consists of two more components:

- Raw material
- Work in process

A manufacturing also is interested in examining the efficiency with which the firm converts raw material into work in process and the work in process into finished goods.

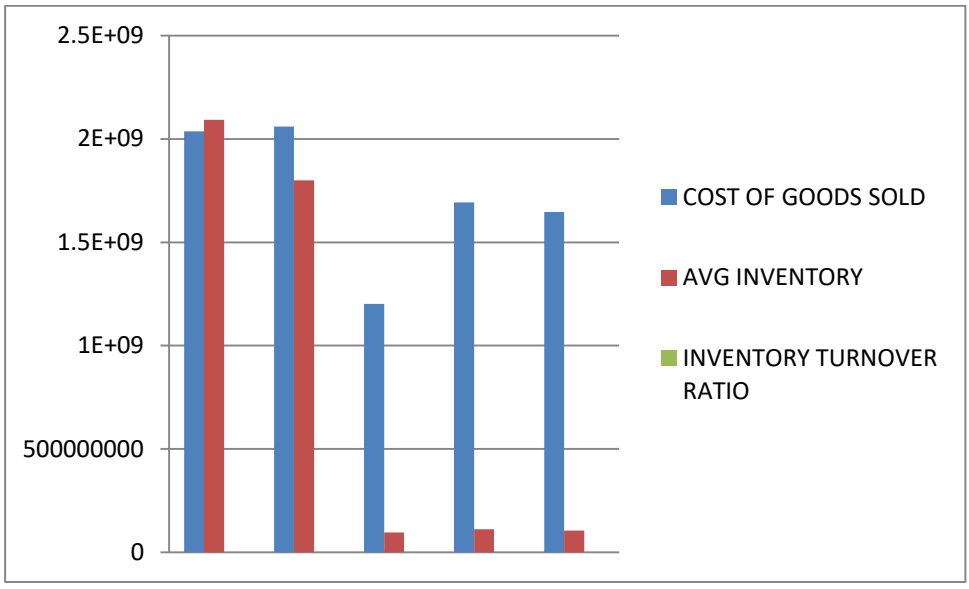
That this, he would like to know the levels of raw materials inventory and work in process inventory held by the firm on an average. The raw material inventory should be related to materials consumed, and work in process to the cost of production.

1. INVENTORY TURNOVER RATIO

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

S.NO	YEAR	COST OF GOODS SOLD	AVG INVENTORY	INVENTORY TURNOVER RATIO
1	2018-2019	2036920290	2092203987	11.36
2	2019-2020	2059187198	1799590643	11.73
3	2020-2021	1202212926.24	97492024.38	12.01
4	2021-2022	1693034164.20	112736262.20	12.35
5	2022-2023	1646389535.24	105792045.26	12.72

Table 4.1



Graph 4.1

INTERPRETATION:

Table shows the inventory turnover ratio. Inventory turnover ratio ranges from 11.36 to 12.72 It indicates fluctuating inventory turnover and it affects the liquidity position of the firm. We can observe that the firm's inventory turnover ratio is increasing at the present year.

2. FINISHED GOODS TURNOVER

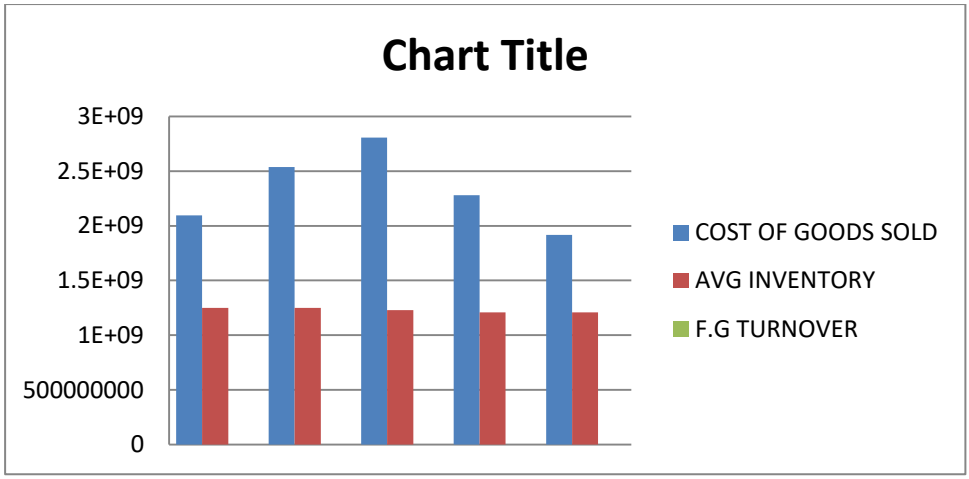
$$\text{Finished goods turnover} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

Cost of sold goods = Opening stock + Purchases – Manufacturing Expenses – Closing stock

$$\text{Average Inventory} = \frac{\text{Opening stock+Closing stock}}{2}$$

S.NO	YEAR	COST OF GOODS SOLD	AVG INVENTORY	F.G TURNOVER
1	2018-2019	2095342922	1249635920	1.72
2	2019-2020	2535785940	1248658429	2.03
3	2020-2021	2804920947	1229682376	2.28
4	2021-2022	2278823517	1209220819	1.90
5	2022-2023	1917963888	1207767981	1.34

Table 4.2



Graph 4.2

INTERPRETATION:

Table shows the finished goods turnover. It indicates fluctuating finished goods turnover and it affects the liquidity position of the firm. At 2018-2019 its 1.72 and its increasing in next year 2.03.again its increasing in respective years with 2.28. the next prospective years its in decreasing position with 1.90 and 1.34 respectively. We

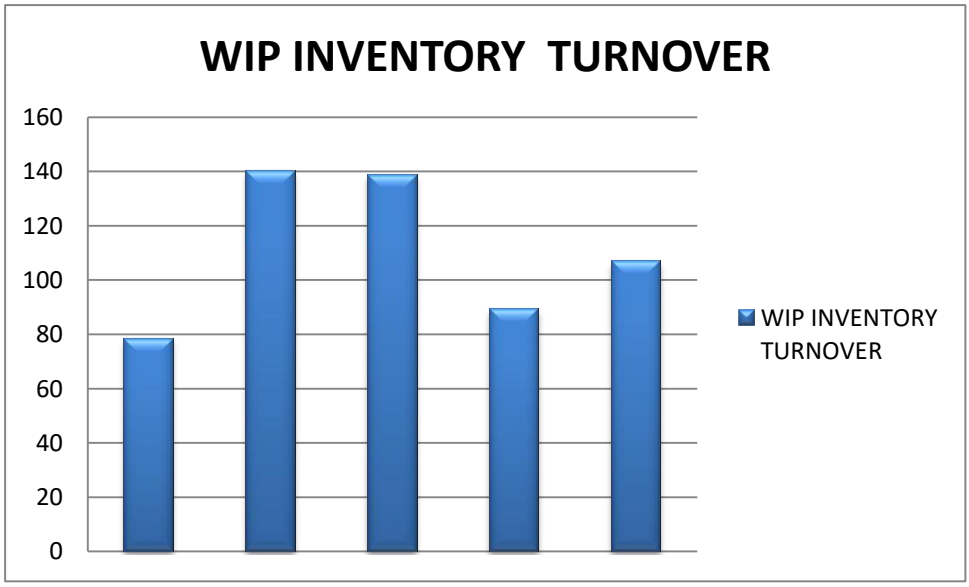
can observe that the firm's finished goods turnover ratio is decreasing at the present year.

3. W.I.P. INVENTORY TURN OVER

$$\text{Work in process inventory turnover} = \frac{\text{Cost of production}}{\text{Average work in process Inventory}}$$

S.NO	YEAR	COST OF PRODUCTION (Rs)	AVG W I P INVENTORY (Rs)	WIP INVENTORY TURNOVER
1	2018-2019	2207680764	24252724	78.25
2	2019-2020	2695601723	20820307.5	170.09
3	2020-2021	2946205988	22869783	168.82
4	2021-2022	2207646507	23486020	89.31
5	2022-2023	1919342052	18184556	106.66

Table 4.3



Graph 4.3

INTERPRETATION:

Table shows the Work in process inventory turnover. Work in process inventory turnover ratio ranges from 78.25 to 170.09. It indicates fluctuating Work in process inventory turnover and it affects the liquidity position of the firm. At 2018-2019 ITS 78.25 and its increasing in next year 170.09.again its decreasing in respective years

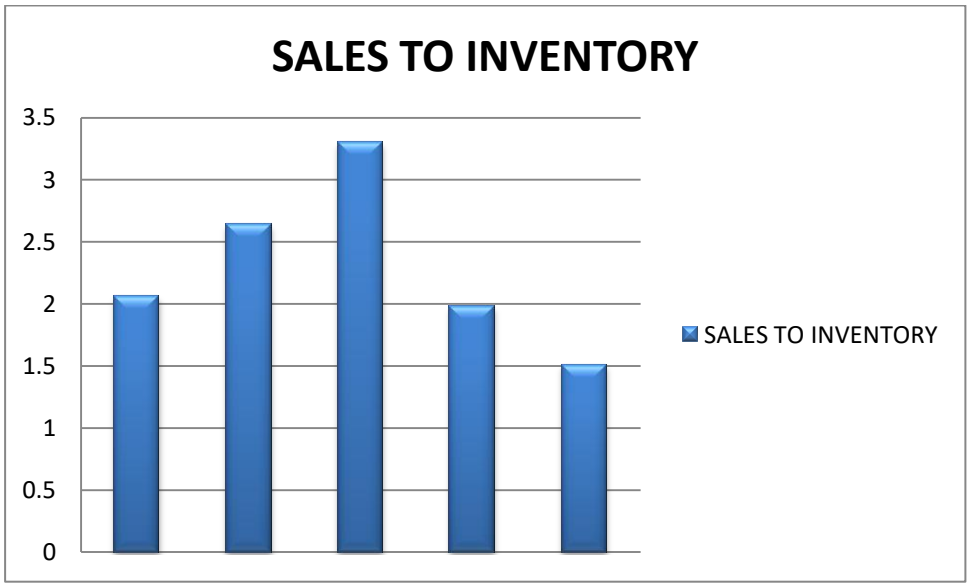
with 168.82 the next prospective years its in decreasing position with 89.31.increasing in the next year 106.66 respectively. We can observe that the firm's work in process inventory turnover ratio is increasing at the present year.

S.NO	YEAR	SALES	TOTAL INVENTORY	SALES TO INVENTORY
1	2018-2019	2958724922	1732024825	2.06
2	2019-2020	3591709940	1659330982	2.64
3	2020-2021	3304974847	1627507945	3.30
4	2021-2022	2506897517	1267778839	1.98
5	2022-2023	2042099888	1284584247	1.51

4. **SALES TO INVENTORY**

$$\textbf{Sales to inventory} = \frac{\textbf{Sales}}{\textbf{Total inventory}}$$

Table 4.4



Graph 4.4

INTERPRETATION

Table shows the sales to inventory ratio. A sale to inventory ranges from 1.51 to 3.30. It indicates fluctuating sales to inventory turnover and it affects the liquidity

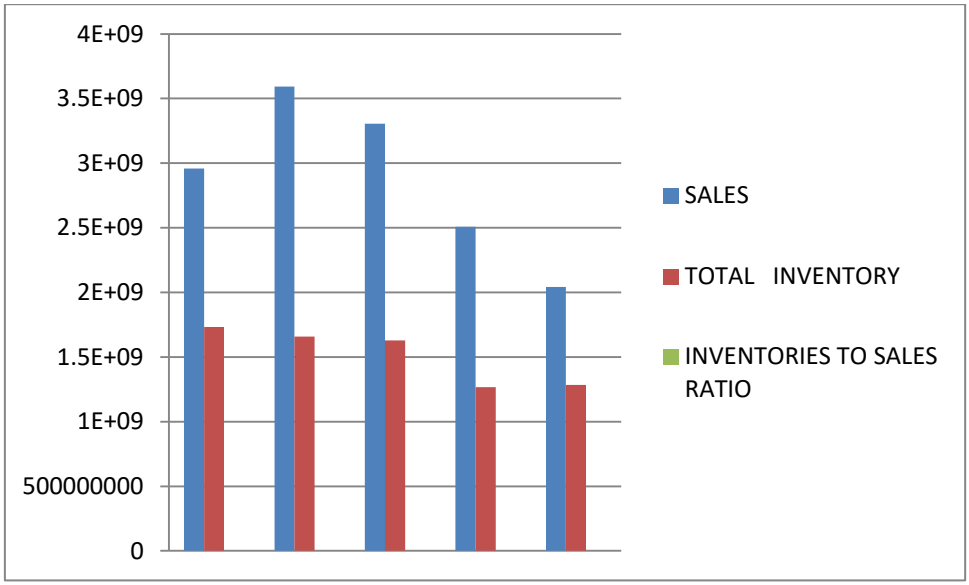
position of the firm. At 2018-2019 it was 2.06 and its increasing in next year 2.64.again its increasing in respective years with 3.30. The next prospective years its in decreasing position with 1.98and 1.51 respectively. We can observe that the firm's sales to inventory turnover ratio is decreasing at the present year.

5. INVENTORIES TO SALES

$$\textbf{Inventory to sales} = \frac{\textbf{Total inventory}}{\textbf{sales}} * \textbf{100}$$

S.NO	YEAR	SALES	TOTAL INVENTORY	INVENTORIES TO SALES RATIO
1	2018-2019	2958724922	1732024825	48.4
2	2019-2020	3591709940	1659330982	37.9
3	2020-2021	3304974847	1627507945	40.20
4	2021-2022	2506897517	1267778839	50.57
5	2022-2023	2042099888	1284584247	66.19

Table 4.5



Graph 4.5

INTERPRETATION:

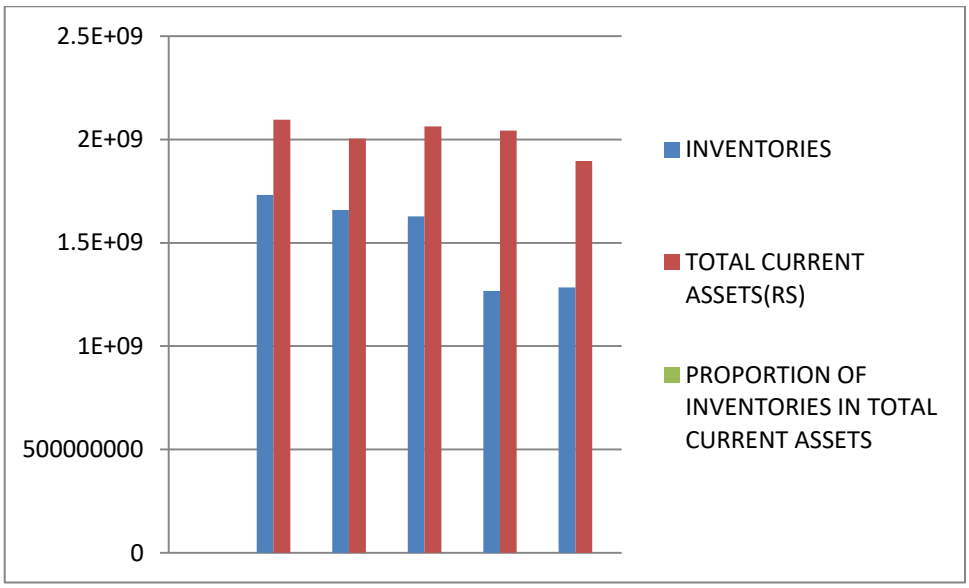
Table shows the inventory to sales ratio. A inventory to sales ranges from 37.9 to 66.19. It indicates fluctuating inventory to sales turnover and it affects the liquidity position of the firm. At 2018-2019 Its 48.4 and its decreasing in next year 37.9.again its increasing in respective years with 40.20. The next prospective years its in increasing position with 50.57 and 66.19 respectively. We can observe that the firm's inventory to sales turnover ratio is increasing at the present year.

S.NO	YEARS	INVENTORIES (RS)	TOTAL CURRENT ASSETS(RS)	PROPORTION OF INVENTORIES IN TOTAL CURRENT ASSETS
1	2018-2019	1732024825	2095225857	72.16
2	2019-2020	1659330982	2003549011	67.84
3	2020-2021	1627507945	2062020461	75.34
4	2021-2022	1267778839	2042002606	72.78
5	2022-2023	1284584247	1894954200	80.50

6. INVENTORY PRODUCTION OF TOTAL CURRENT ASSETS

$$\textbf{Inventory production of total current assets} = \frac{\textbf{Inventories}}{\textbf{Total current assests}} * \textbf{100}$$

Table 4.6



Graph 4.6

INTERPRETATION:

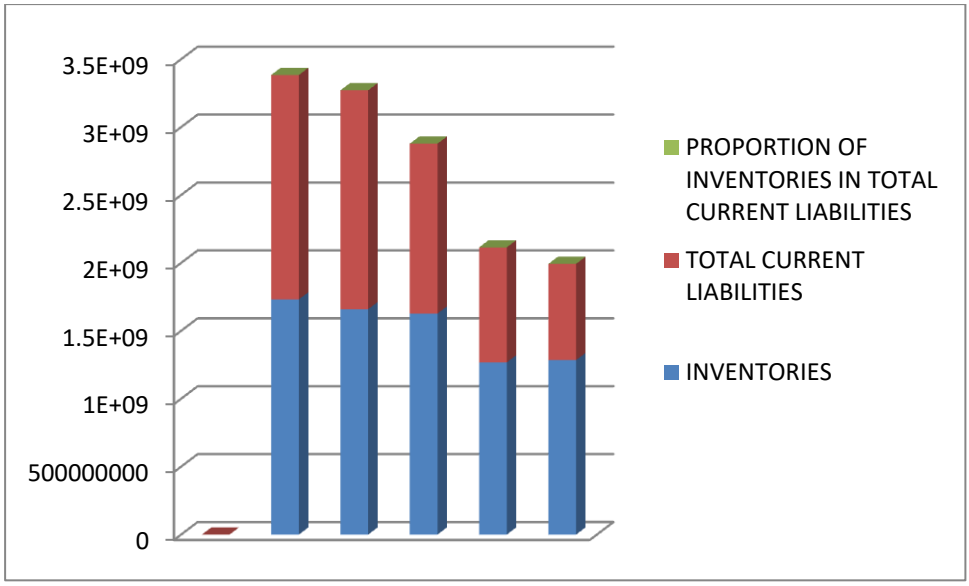
From the table we can say the proportion of inventories to total current assets are varies between 72.16 to 80.50 in the year 2022-2023. The rate of current assets is ranges from 67.84 to 80.50 .the proportion of using current assets is gradually increasing from 2022-2023.we have observed in the year of 2018-2019 the company uses the inventory 72.16. Its decreasing in next year again its increasing in respective years with 75.34. The next -prospective years its in decreasing position with 72.78 and increasing the next year 80.50 respectively. We can observe that the firm's proportion of inventories to total current assets is increasing at the present year.

7. INVENTORY PRODUCTION OF TOTAL CURRENT LIABILITIES

Inventory production of total current liabilities $= \frac{\textbf{Inventories}}{\textbf{Total current liabilities}} * \mathbf{100}$

S.NO	YEARS	INVENTORIES (RS)	TOTAL CURRENT LIABILITIES (RS)	PROPORTION OF INVENTORIES IN TOTAL CURRENT LIABILITIES
1	2018-2019	1732024825	1652060925	105.91
2	2019-2020	1659330982	1612022683	103.63
3	2020-2021	1627507945	1250720820	106.18
4	2021-2022	1267778839	846918549	189.69
5	2022-2023	1284584247	708540086	201.30

Table 4.7



Graph 4.7

INTERPRETATION:

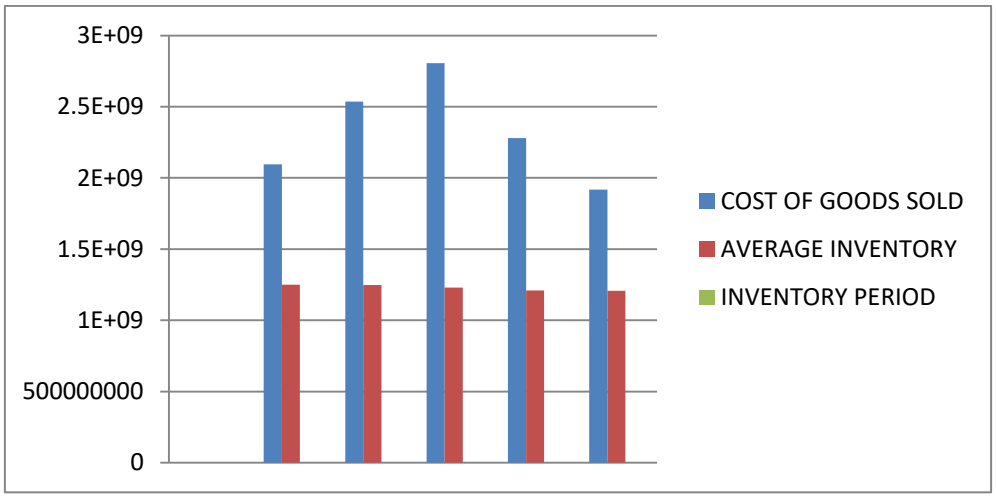
From the table we can say the proportion of inventories to total current liabilities are varies between 189.69 to 201.30 in the year 2022-2023.The rate of liabilities is ranges from 103.63 to 201.30.The proportion of using current liabilities is gradually increasing from 2021-2022.we have observed in the year of 2018-2019 the company uses the inventory 105.91 of current liabilities. In the year of 2022-2023 the percentage of the current liabilities is increased by 31.61.The using of more current liabilities is give more losses to the company.

8. INVENTORY PERIOD

$$\textbf{Inventory period} = \frac{\textbf{Average Inventory}}{\textbf{Annual cost of goods sold}} * \mathbf{365}$$

Table 4.8

S.NO	YEARS	COST OF GOODS SOLD (RS)	AVERAGE INVENTORY (RS)	INVENTORY PERIOD
1	2018-2019	2095342922	1249635920	201.62
2	2019-2020	2535785940	1248658429	220.73
3	2020-2021	2804920947	1229682376	200.02
4	2021-2022	2278823517	1209220819	201.92
5	2022-2023	1917963888	1207767981	272.74



Graph 4.8

INTERPRETATION:

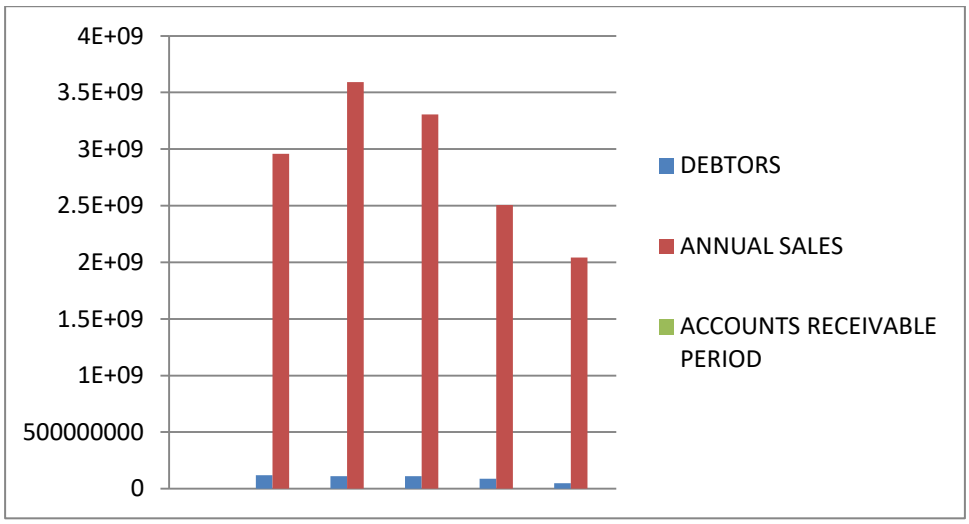
Table shows the proportion of inventory period it varies between 201.92 to 272.74 in the year 2022-2023. The inventory period ranges from 200.02 to 272.74.we have observed in the year of 2018-2019 the company spends more period 201.62. From the year 2022-2023 the inventory period is gradually increased .these leads the company gains more losses.

9. ACCOUNTS RECIEVABLE PERIOD

$$\textbf{Account receivable period} = \frac{\textbf{Debtors}}{\textbf{Annual sales}} * \textbf{365}$$

S.NO	YEARS	DEBTORS (RS)	ANNUAL SALES (RS)	ACCOUNTS RECEIVABLE PERIOD
1	2018-2019	120609829	2958724922	18.61
2	2019-2020	110072382	3591709940	11.20
3	2020-2021	111660542	3304974847	16.29
4	2021-2022	87718434	2506897517	16.77
5	2022-2023	48592344	2042099888	9.17

Table 4.9



Graph 4.9

INTERPRETATION:

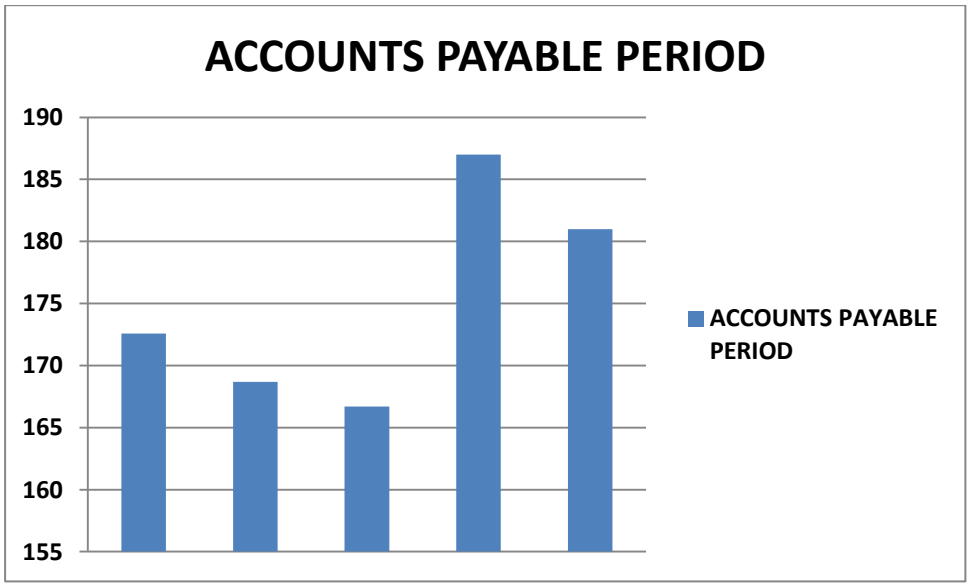
Table shows the accounts receivable period ratio. Accounts receivable period ranges from 9.17 to 18.61. It indicates fluctuating accounts receivable period and it affects the liquidity position of the firm. At 2018-2019 its 18.61 and its decreasing in next year 11.20.again its increasing in respective years with 16.29. The next prospective years its in increasing position with 16.77.In the 2022-2023 its decreasing position 9.17 respectively. We can observe that the firm's accounts receivable period is decreasing at the present year.

10. ACCOUNTS PAYABLE PERIOD

$$\text{Account payable period} = \frac{\text{Average accounts payable period}}{\text{Annual cost of goods sold}} * 365$$

S.NO	YEARS	ANNUAL COST OF GOODS SOLD (RS)	AVERAGE ACCOUNTS PAYABLE PERIOD (RS)	ACCOUNTS PAYABLE PERIOD
1	2018-2019	2,19,53,42,922	78,28,20,338	172.57
2	2019-2020	2,53,57,85,940	89,40,52,720	168.69
3	2020-2021	2,80,49,20,847	97,37,27,596	166.71
4	2021-2022	2,27,88,23,517	91,78,40,955	187.01
5	2022-2023	1,61,49,63,888	62,82,72,959	181.0

Table 4.10



Graph 4.10

INTERPRETATION:

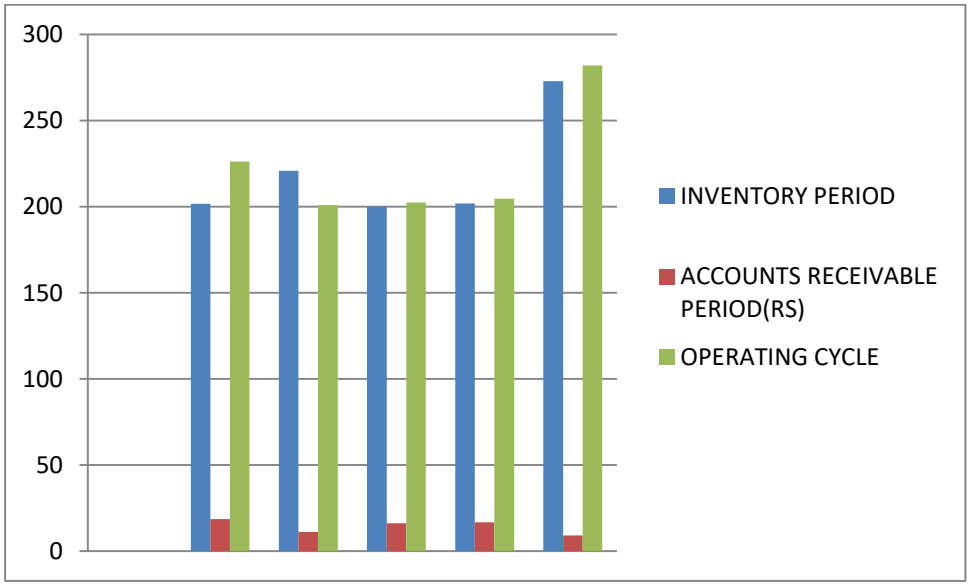
Table shows proportion of Accounts payable period varies between 187.01 to 181 in the year 2022-2023. The Accounts payable period ranges from 166.71 to 187.01. We have observed in the year of 2021-2022 the company pays highest Accounts payables 187.01. From the year 2022-2023 the accounts payable period is gradually decreased. These leads the company gains more profit.

11. OPERATING CYCLE

Operating cycle = Inventory period + account receivable period

S.NO	YEARS	INVENTORY PERIOD (RS)	ACCOUNTS RECEIVABLE PERIOD(RS)	OPERATING CYCLE
1	2018-2019	201.62	18.61	226.23
2	2019-2020	220.73	11.20	200.92
3	2020-2021	200.02	16.29	202.31
4	2021-2022	201.92	16.77	204.69
5	2022-2023	272.74	9.17	281.87

Table 4.11



Graph 4.11

INTERPRETATION:

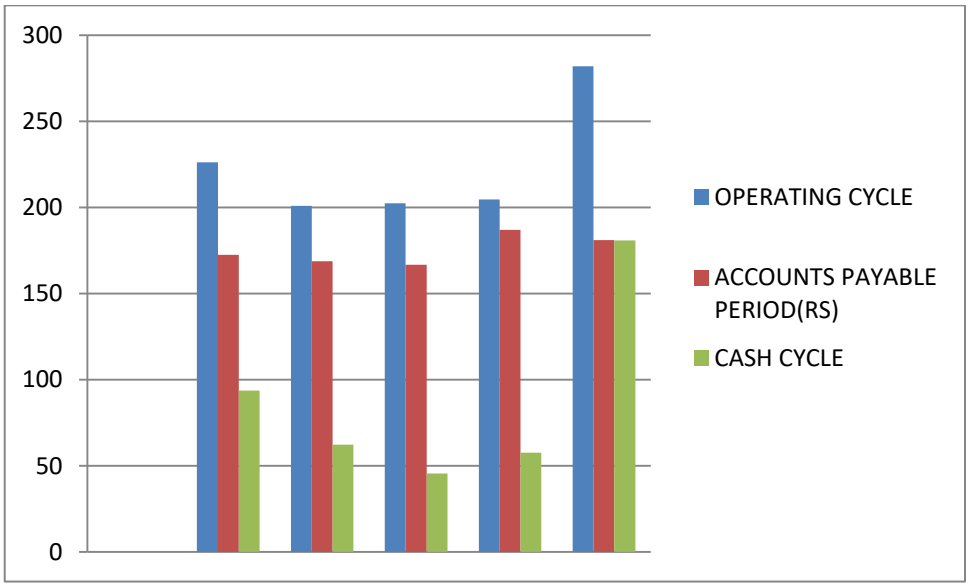
The table shows the proportion of operating cycle it varies between 204.69. to 281.87 in the year 2022-2023. The Operating cycle ranges from202.31 to 281.87. We have observed in the year 2022-2023 the company spends more time 281.87. From the year 2020-2021 the operating cycle is gradually increased as the receivables were received within time.

12. CASH CYCLE

Cash cycle = Operating cycle – Accounts payable period

S.NO	YEARS	OPERATING CYCLE (RS)	ACCOUNTS PAYABLE PERIOD(RS)	CASH CYCLE
1	2018-2019	226.23	172.57	93.66
2	2019-2020	200.92	168.69	62.23
3	2020-2021	202.31	166.71	45.6
4	2021-2022	204.69	187.01	57.68
5	2022-2023	281.87	181.0	180.87

Table 4.12



Graph 4.12

INTERPRETATION:

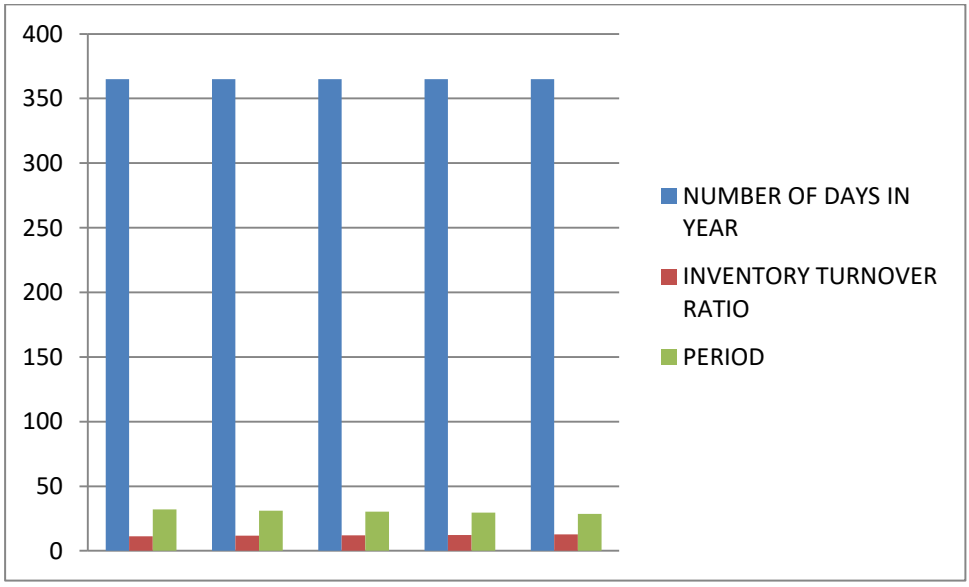
From the table we can say the proportion of cash cycle is varies between 57.68 to 180.87 in the year 2022-2023.We have observed in the year of 2022-2023 the company Receives the highest cash operations 180.87. From the year 2018-2023 the cash operating cycle is gradually decreased these leads the company gains more profits.

13. INVENTORY HOLDING PERIOD

$$\text{Days of Inventory Holding} = \frac{365}{\text{Inventory Turnover Ratio}}$$

Table 4.16

S.NO	YEARS	NUMBER OF DAYS IN YEAR	INVENTORY TURNOVER RATIO	PERIOD
1	2018-2019	365	11.36	32
2	2019-2020	365	11.73	31.11
3	2020-2021	365	12.01	30.39
4	2021-2022	365	12.35	29.55
5	2022-2023	365	12.72	28.69



Graph 4.16

INTERPRETATION:

The table shows the trend of inventory holding period of the company. It is understood that the days of inventory holding has gradually decreased from 32days to 28 days, because the inventory turnover ratio and the inventory holding period are interrelated. If the inventory turnover ratio increases than the days of the inventory holding decreases and vice-versa. It indicates the improvement in the management efficiency in converting their inventories into sales as fast as possible.

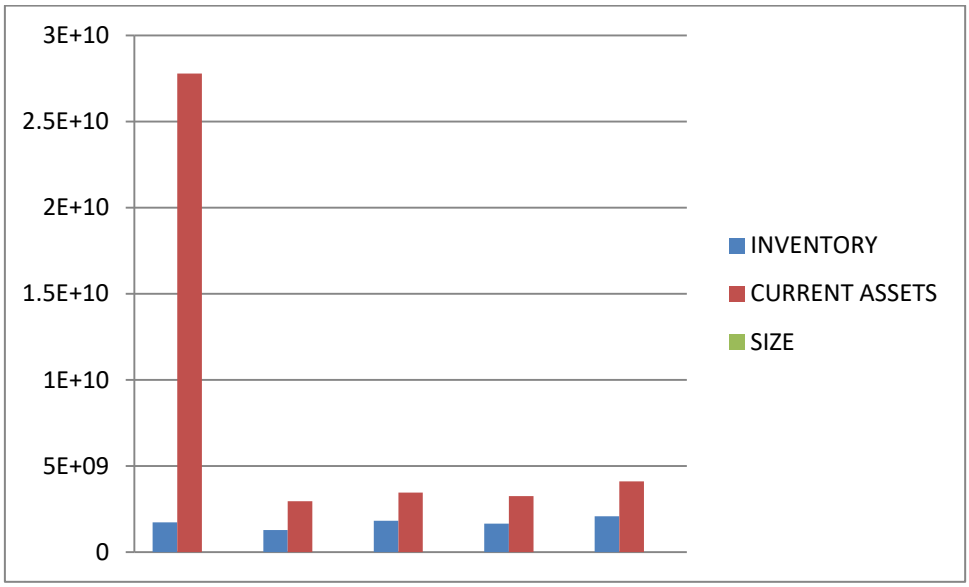
14. SIZE OF INVENTORY:

$$\textbf{Size of Inventory} = \frac{\textbf{Inventory}}{\textbf{Total current Assets}} * \textbf{100}$$

Table 4.17

S.NO	YEARS	INVENTORY	CURRENT ASSETS	SIZE
1	2018-2019	1742272839	27777345445	51.92
2	2019-2020	1297309065	2969446281	43.68
3	2020-2021	1836247947	3463204801	44.35
4	2021-2022	1653553083	3267995688	41.41
5	2022-2023	2082640687	4120939340	43.25

Graph 4.17



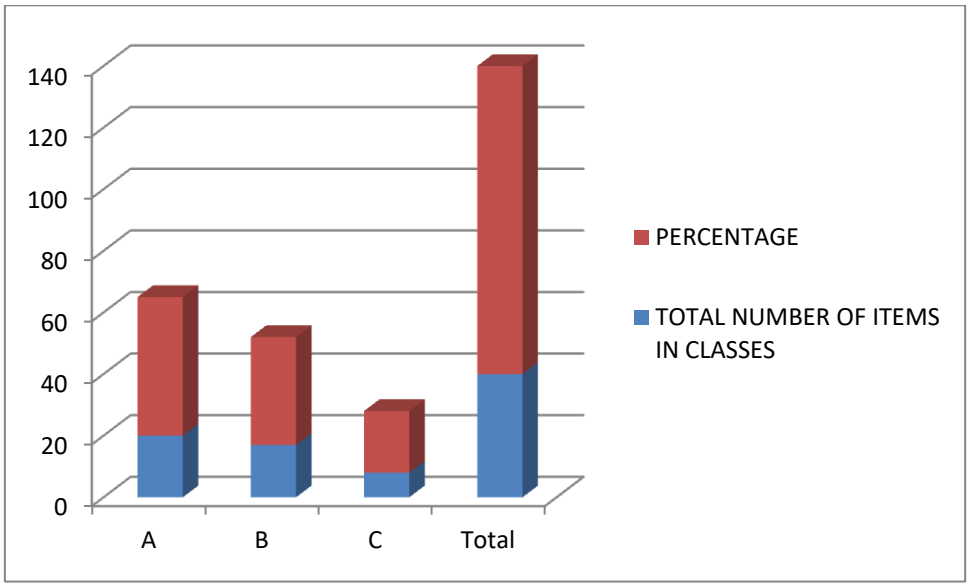
INTERPRETATION:

The table shows the size of inventory in the selected enterprise during the period of 2018-2022. It is evident from the table that inventory constituted the most important element of total Current Assets in this study as it is found on an average around 52 percent of the total Current Assets. It is observed from the table that the size of inventory in TATA STEEL LTD tends to decrease and increase from 2018-2019 to 2021-2022 and show an increase in the current year.

15. ABC ANALYSIS:

CATEGORIES	TOTAL NUMBER OF ITEMS IN CLASSES	PERCENTAGE
A	20	45
B	17	35
C	8	20
Total	40	100

Table 4.18



Graph 4.18

INTERPRETATION:

The above table shows the classification of various components as A, B & C classes using ABC analysis techniques based on unit value. From the classification A classes are those whose unit value is more than Rs.100 and constitutes 45% of total components. B classes are those whose unit value is between Rs.25-100 constitutes 35% of total components and C classes are those whose unit value is less than Rs.25 constitutes 30% of total components. It is good that the company maintains its inventories based on its value using controlling techniques.

CHAPTER-V

FINDINIGS, SUGGESTIONS & CONCLUSION

FINDINIGS

- TATA STEEL LTD maintains good safety rules.
- TATA STEEL LTD is using ABC analysis to categorize the different products that the company produces so that proper management of inventory is carried out. The major stake of profit is obtained from class A products.
- TATA STEEL LTD is using the weighted average method per month valuating the stock, this indicates the stock is always total weighted for the production of dairy products. The company has not faced any stock outs.
- The company also produces dairy bi-products, which fetches an additional revenue for the firm.
- The company also maintains its own diary farm which help in reducing the purchasing costs and gain more profits.
- The machinery used in TATA STEEL LTD reduces high man power utilization.
- To hedge the problem of power cut, the firm maintains its own electricity generation plant.
- Overall the inventory management at TATA STEEL LTD is up to the mark.

SUGGESTIONS

- The firm has to sell 40% of the total production to government.
- When the company uses new technology production will increase.
- Compare to various companies competition is reduced as various new techniques and methods are use.
- The level of current assets with respective to the current liabilities should also increase so that good liquidity position be maintain.
- The company should improve its liquidity to the extent its finished goods ideal turnover ratio. Automatically it will lead to increase in current ratio.
- A plan should be drawn to use the surplus milk in some seasons for the manufacture of long-lived bi-products.
- To reduce the tax on the products and move benefits and reveal to percentage at the product to the public. This will give good support not away from government but above public
- Proper balance should be made to increase profits and to ensure liquidity.
- The investments on raw materials should be made as per the requirement. Unnecessary investment may block up the funds.
- Proper demand forecasting should be done and according to that manufacturing takes place.
- The raw material should be acquired from the right source at right quality and at right time.
- The process that was being used by TATA STEEL LTD should undergo changes.

CONCLUSION

Finally it is concluded that inventory of TATA STEEL LTD is very important segment to gain the high profits. In TATA STEEL LTD Inventory management is the heart of organization as well as necessary too. Though TATA STEEL LTD is doing good in manufacturing many products or items, it was found that a little rectification has to be made. Order is placed monthly or quarterly it may cost heavy expenditure for placing orders so many times. High Costs will be beard each time when an order is placed so it is suggestible that order should be placed annually depending on demand. Storage facilities should be modified and separate department of research should be established especially for inventory of goods. In this type of process, it requires more number of employees and suppliers should also wait until the accounts are matched. This process takes an input, adds value to it and provides an output to an internal or external customer. The inventory as well as the inventory management at TATA STEEL LTD is up to the mark.

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