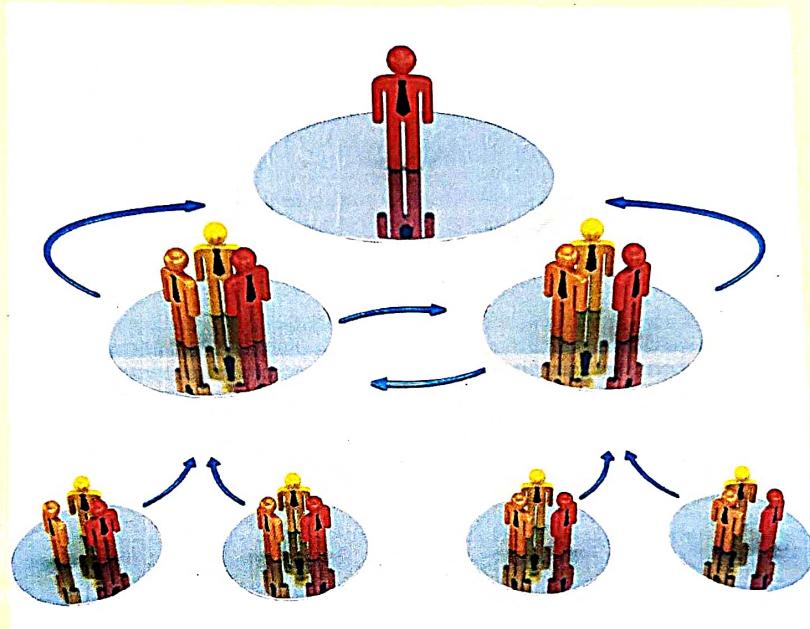


DISHA COLLEGE

DEPARTMENT OF MANAGEMENT

NOTES FILE



SUBJECT NAME- Material Management
SUBJECT INCHARGE- Kajal Tripathi

Unit

I

Material

Management

Material Management

Defn: "It covers the whole range of functions involved in converting raw materials and ancillary supplies into finished products."

- P.R Gokarn

Main goal of material management is to properly plan and control material cost, material supply and material utilization so that they lead to

- (i) Minimization of production
- (ii) Reduction of in the cost of production.
- (iii) Maximization of the margin of profit.

"Material Management is the planning, directing, controlling and co-ordination of all those activities concerned with material & inventory requirement, from the point of their inception to their introduction into manufacturing process."

Meaning

It is a business function. It is concerned with planning acquisition and flow of materials within the supply chain.

Significance of Material Management

Material Management doesn't affect only a particular industry but the entire economic activity of the whole nation. Materials contributes to the quality of the end product. Materials add value to a product.

The margin b/w value of raw materials and the finished product is called as Value added by production.

Conservation of materials and their availability for prosperity is one of the social responsibilities of business. Hence Material management is one of the centers of accountability for performance. Reduction in Material cost is often by about 5 percent is always possible through an efficient management of materials.

Material Management affects the cost categories of the company which have substantial effect on company profits. These are:-

- 1) Material Costs:- These are the costs which arise from the procurement of raw materials, indirect materials, fuels semi-finished and finished products (goods) including delivery costs. The largest percentage of cost comes under management of materials.
- 2) Capital Costs:- These deal primarily with capital tied up in stocks of materials, semi-finished & finished goods including depreciation of value which have to make.
- 3) Overhead Expenses:- They cover overhead expenses of all the separate areas within material management including considerable costs of transport & packaging electronic data processing & disposal.

Objectives

1. Low Price (proper Negotiation)
2. Regular Supply
3. Continuity in quality
4. Efficient handling of material
5. Supplier Relationship
- 6) Forecasting

5 R

- | | |
|-------|---------|
| Right | Quality |
| Right | Qty |
| Right | Place |
| Right | Time |
| Right | Price |
| Right | Source |

Functions of Material Mgmt

1) Planning & Programming

- (a) Requirement & Identification
- (b) Source
- (c) Qty
- (d) Analysis

Programming Material flow, production process, material handling
Inventory control, inspection etc.

2) Material Purchasing & outsourcing

According to planning & programming purchasing is done as per requirements by various dept

Outsourcing. Sometimes some materials are outsourced to maintain the company standard. Due to high demand, Emergency in production (Machine failure, scarcity, strike shortage of time).

3) Storekeeping & Warehousing. Maintenance of material, Temp record of material, durability, wastage.

4) Warehousing Storage of goods, systematic supply, Helping in logistics.

- 4) Inventory Control
Order of material flow - issue, return, calculation of qty & cost.
What qty is req.
How much to be stored
When to reorder & allocate material
Balance b/w actual & estimated demand of material

5) Quality Control & Inspection

Certification of Material

Waste Management

Maintaining standard.

Maintaining quality of material

6) Material Handling

Maintaining material in the store & in production process.

Supply of material

Smooth flow of material

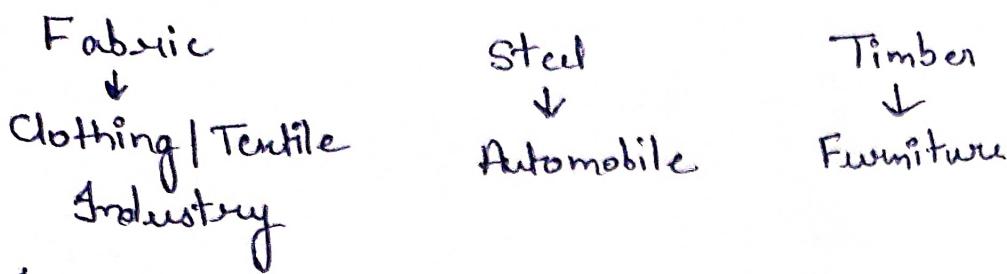
Reducing waste " "

Proper distribution & disposal of material

7) Managing By-products

Sale in Mkt.

Direct Materials

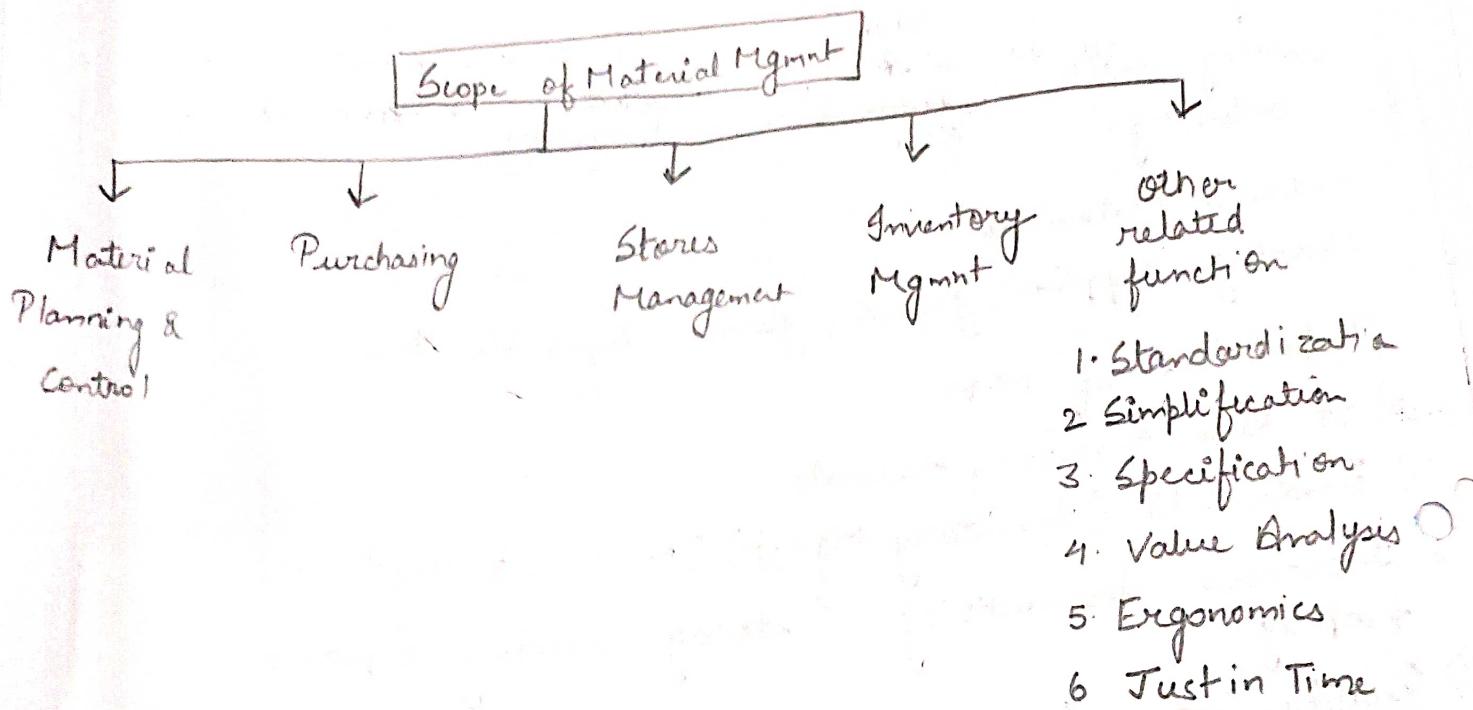


Indirect Materials

Cleaning supplies, grease, gloves disposable items.

Importance of M.M.

- 1) It keeps inventory accurate
- 2) Enables JIT (Inventory Mgmt) (No overstocking)
- 3) Increases productivity. (storage, inventory is placed properly.)
- 4) Quality control (proper quality | good quality materials leads to good products)
- 5) Reduce cost (Machinery breakdown)
- 6) Availability of materials at right time.



Material Planning → Based on sales forecast and production plans and control is done.

Purchasing → It includes selection of sources of supply finalization in terms of purchase, placement of purchase orders, follow up. Managing supplier relation. cost cutting

Store Management → It involves physical control of materials preservation of stores, minimization of damage through timely disposal. Store is responsible for physical verification of stocks and reconciling them with whether the store maintains that temp & humidity as per req figures of material. Hygienic factors, closed compartments.

Inventory Control Mgmt → It refers to materials in stock. It is also called the idle resource of an enterprise.

Proper maintenance

36.

- 3) Standardization Specify the target, regarding quality inferior good superior, right. Carrying cost will be less
- 2) Simplification Simplify the tasks. Specification of ~~the~~ materials
- 1) Specification Materials should be easily accessible & placed at right place.
Clarity of specification, buyer & seller should be clear regarding the items. If seller doesn't properly understand regarding the material specified, he might send wrong items due to which transportation cost will be wasted.

Value Analysis → Necessary function at minⁿ cost without compromising quality, reliability, performance & appearance.

- Cost reduction systematic identification & elimination of unnecessary cost.
how its done :- increasing use of alternatives, less expensive material, cheaper design etc to provide same performance.

Ergonomics → Ergo-Work Norms - Natural laws
 of work.

Understanding the relationship b/w worker and their work.

People & their work.

- Worker has been given task as per their capability & capacity.

JIT → goods are received from suppliers only as they are needed.

Carrying cost is the cost of holding inventory over a period of time (rent, utility, salary) opportunity cost
inventory cost related to perishability, shrinkage & insurance.

Inventory Management

- focuses on overall inventory levels & their status
- Provides info to calculate sale trends, profit margins & holding cost.
- determines reorder points based on demand & preferred stock levels.
- Shows inventory availability status in record for fulfillments.

Warehouse Management

- Tracks movement & location of stock within the warehouse.

Inventory is the stock of goods a company has on hand available for sale. It includes raw materials, semifinished, finished products.

Warehouse is a physical location where those goods are stored.

Characteristics of Material Mgmt

- To have adequate materials on hand at right time at right place when needed.
- To pay lowest possible prices, ^{Negotiations} with a consistent quality and value requirement.
- To be simple to Process followed should be simple & easy.
- To operate efficiently.

Scope of Material Mgmt

- Efficient use of material that is bought for specific purpose.
- Budgetary control (Material purpose should be used in that only)
- Optimized utilization of resources (Money should be spent as per the req.)
- Increasing productivity Maintaining accuracy in material will increase productivity.
- Branding
- Just In Time Diwali / Dhanteras electronics.
- Forecasting & Planning Estimation of demand.

Importance of Material Mgmt

- Purchasing of Material
- Reduction in cost of Material
- Helps in seeing new opportunity
- Helps in maintaining break even point.
- Helps in time management
- Helps in quality control
- Helps in waste disposal
- Helps in Material Handling.

UNIT 1

Meaning, Definition and Characteristics of Material Management, Scope, Importance of Material Management, Functions of Material Management, Objectives of Material Management, Problems faced in Material Management.

❖ INTRODUCTION

Materials management is a function, which aims for integrated approach towards the management of materials in an industrial undertaking. Its main objective is cost reduction and efficient handling of materials at all stages and in all sections of the undertaking. Its function includes several important aspects connected with material, such as, purchasing, storage, inventory control, material handling, standardization etc. The need for materials management was first felt in manufacturing undertakings. The servicing organizations also started feeling the need for this control. And now even non-trading organizations like hospitals, universities etc. have realized the importance of materials management. Every organization uses a number of materials. It is necessary that these materials are properly purchased, stored and used.

Any avoidable amount spent on materials or any loss due to wastage of materials increases the cost of production. The object of materials management is to attack materials cost on all fronts and to optimize the overall end results. Materials management connotes controlling the kind, amount, location and turning of the various commodities used in and produced by the industrial enterprises. It is the control of materials in such a manner that it ensures maximum return on working capital.

Materials management is defined as “the function responsible for the coordination of planning, sourcing, purchasing, moving, storing and controlling materials in an optimum manner so as to provide a pre-decided service to the customer at a minimum cost”. From the definition it is clear that the scope of materials management is vast.

Materials management is concerned with management functions supporting the complete cycle of material flow, from the purchase and internal control of production materials to planning and control of work in process, to warehousing, shipping and distribution of the finished product. An effective materials management process ensures that the right kinds of materials are at the right place whenever needed. Materials management is concerned with planning, directing and controlling the kind, amount, location, movement and timing of various flows of materials used in and produced by the process.

L.J. De Rose:

“Material management is the planning, directing, controlling and co-ordination of all those activities concerned with material and inventory requirements, from the point of their inception to their introduction into manufacturing process.”

As per De Rose all those functions which start with the procurement of materials and end with completion of manufacturing are a part of material management.

N.K. Nair:

“Material management is the integrated functioning of the various sections of an organization dealing with the supply of materials and allied activities in order to achieve maximum co-ordination.”

Meaning of Material Management

Materials management is an essential business function. It is concerned with planning, acquisition and flow of materials within the supply chain. Material is one of the four basic resources.

Example: Labor, Material, Equipment and Capital of any industrial or business activity.

For a long time, it was regarded as a routine function with less importance. But over the years, with accelerating economic, technological, societal and environmental changes, this function has become more important, more complex, and more professional.

However, it is complex as it confronts various issues including outsourcing, global sourcing, size of supply base, shorter Lead time, smaller lot size, price determination, mode/carrier selection, maintaining long-term relationship with suppliers, choosing the right type of information technology, legal issues, etc.

Significance of Materials Management

The importance of materials management cannot be overemphasized in this complex industrial world.

- It affects not only a particular industry but the entire economic activity of a whole nation. Material contributes to the quality of the end product. The amount spent on materials is increasing in relation to the expenditure on other inputs. Materials add value to a product.

Did u know? The margin between the values of raw materials and the finished products is known as the value added by production.

Conservation of materials and their availability for prosperity is one of the social responsibilities of business hence, materials management is one of the centers of accountability for performance. Reduction in the materials cost by about 5 per cent is always possible through an efficient management of materials. Evidence is there to prove that skilful and imaginative management had been able to save even more than 5 per cent of the total cost of the final product.

They usually represent 50 to 60 per cent of the total cost of the final product. An analysis of the financial statement of a large number of manufacturing organizations reveals the fact that on an average about 60 per cent of the total expenditure is locked up in materials.

Materials management determines three cost categories within the company which, in most cases, have a substantial effect on company profits. In team, these are:

Materials Costs: These are those costs which arise for the procurement of raw materials, indirect materials, fuels, semi-finished and finished products (goods), including delivery costs. In the manufacturing industry they constitute the largest percentage of the costs of Management of Materials.

Capital Costs: These cover primarily interest which accrues for the capital tied up in the stocks of materials, semi-finished and finished products (good), including depreciation for value adjustments which have to make.

Overhead Expenses: They cover the overhead expenses and/or cost centre expenses of all the separate areas within materials management, including the sometimes considerable costs of transport and packaging, electronic data processing and disposal.

Integrated materials management which is conceived as a comprehensive supply system can substantially contribute to a company's profits, via its systematic influence upon these cost categories.

❖ Objectives of Materials Management

Materials management's considerable effect on profits demands that its objectives be derived from the general business objectives "maintaining competitiveness" and "satisfactory profitability".

The main objectives of materials management are as follows:

- To ensure continuous uninterrupted production or operation or project work by maintaining a steady flow of materials;
- To achieve the above objective in an efficient and economical manner;
- To effect economies in the cost of materials by purchasing materials of the right quality, in the right quantity, at the right time, from the right source, at the right price;
- To affect economies in the costs incurred on materials after they have been purchased, through storage, processing and warehousing, till the finished goods ultimately reach the customer. These economies contribute towards cost thereby leading to higher profits;
- To reduce working capital requirements through proper and scientific inventory control;
- To be alive to the changes in the market in respect of new products; and consequently;
- To improve the quality of manufactured goods by use of better raw materials or components and thereby the increase the competitiveness on such goods put of sale;
- To increase the competitiveness of manufactured goods by making it possible to reduce their prices through cost reduction, especially by value analysis; □ To save foreign exchange through import substitution and economizing on foreign purchases;
- To ensure cooperation among all departments of the enterprise to meet materials management objectives both at the corporate and functional levels and to ensure proper coordination in respect of such activities;
- To conserve materials resources within enterprise, thereby contributing to the conservation of national resources.



❖ Importance of Material Management:

Material management is a service function. It is as important as manufacturing, engineering and finance. The supply of proper quality of materials is essential for manufacturing standard products. The avoidance of material wastage helps in controlling cost of production. Material management is essential for every type of concern.

The importance of material management may be summarized as follows:

1. The material cost content of total cost is kept at a reasonable level. Scientific purchasing helps in acquiring materials at reasonable prices. Proper storing of materials also helps in reducing their wastages. These factors help in controlling cost content of products.
2. The cost of indirect materials is kept under check. Sometimes cost of indirect materials also increases total cost of production because there is no proper control over such materials.
3. The equipment is properly utilized because there are no break downs due to late supply of materials.
4. The loss of direct labour is avoided.
5. The wastages of materials at the stage of storage as well as their movement is kept under control.
6. The supply of materials is prompt and late delivery instances are only few.
7. The investments on materials are kept under control as under and over stocking is avoided.
8. Congestion in the stores and at different stages of manufacturing is avoided.

❖ Functions of Material Management:

Material management covers all aspects of material costs, supply and utilization. The functional areas involved in material management usually include purchasing, production control, shipping, receiving and stores.

The following functions are assigned for material management:

1. Production and Material Control:

Production manager prepares schedules of production to be carried in future. The requirements of parts and materials are determined as per production schedules. Production schedules are prepared on the basis of orders received or anticipated demand for goods. It is ensured that every type or part of material is made available so that production is carried on smoothly.

2. Purchasing:

Purchasing department is authorized to make buying arrangements on the basis of requisitions issued by other departments. This department keeps contracts with suppliers and collects quotations etc. at regular intervals. The effort by this department is to purchase proper quality goods at reasonable prices. Purchasing is a managerial activity that goes beyond the simple act of buying and includes the planning and policy activities covering a wide range of related and complementary activities.

3. Non-Production Stores:

MATERIAL MANAGEMENT

BBA V SEM

Non-production materials like office supplies, perishable tools and maintenance, repair and operating supplies are maintained as per the needs of the business. These stores may not be required daily but their availability in stores is essential. The non-availability of such stores may lead to stoppage of work.

4. Transportation:

The transporting of materials from suppliers is an important function of materials management. The traffic department is responsible for arranging transportation service. The vehicles may be purchased for the business or these may be chartered from outside. It all depends upon the quantity and frequency of buying materials. The purpose is to arrange cheap and quick transport facilities for incoming materials.

5. Materials Handling:

It is concerned with the movement of materials within a manufacturing establishment and the cost of handling materials is kept under control. It is also seen that there are no wastages or losses of materials during their movement. Special equipment's may be acquired for material handling.

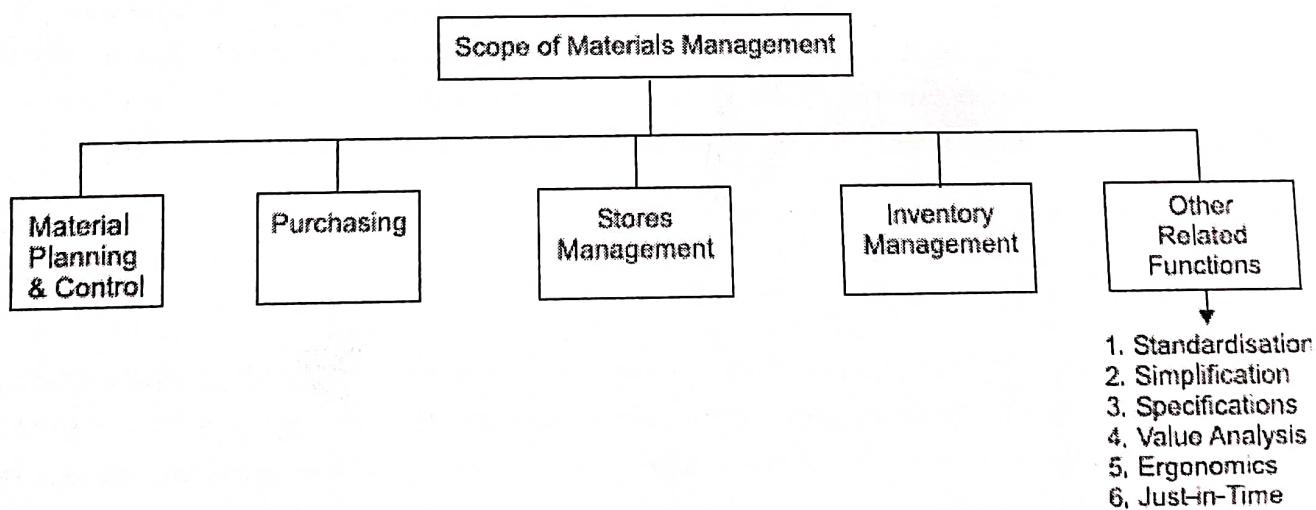
6. Receiving:

The receiving department is responsible for the unloading of materials, counting the units, determining their quality and sending them to stores etc. The purchasing department is also informed about the receipt of various materials.

❖ Scope of Material Management

The scope of Materials Management varies greatly from company to company and may include material planning and control, production planning, Purchasing, inventory control, in-plant materials movement, and waste management. It is a business function for planning, purchasing, moving, storing material in a optimum way which help organisation to minimise the various costs like inventory, purchasing, material handling and distribution costs.

Material management is a methodology for planning, organizing, and controlling all those activities principally concerned with the flow of materials into an organization. The scope of Materials management changes enormously from one organization to another and may incorporate material preparation and control, creation arranging, Buying, stock control, in-plant materials development, and waste administration. It is a business work for planning, purchasing, moving, putting away material in an ideal way which assists association with limiting the different costs like inventory, purchasing, material taking care of and distribution costs. Materials management is concerned about administration capacities supporting the complete cycle of material flow, from the purchase and internal control of creation materials to planning and control of work in process, to warehousing, distribution and shipping of the finished item. A viable materials management cycle guarantees that the perfect sorts of materials are at the ideal spot at whatever point required. Materials management is one of the significant activities of business. There is no broad understanding about exactly what activities are embraced by materials management. A few directors would connect materials management with their material or creation control divisions, which plan materials necessities and may likewise control inventories of both unrefined components and in-process materials. Others would connect it with the exercises of their buying divisions in managing outside providers



- **Materials planning and control:**

Based on the sales forecast and production plans, the materials planning and control is done. This involves estimating the individual requirements of parts, preparing materials budget, forecasting the levels of inventories, scheduling the orders and monitoring the performance in relation to production and sales.

- **Purchasing:**

This includes selection of sources of supply finalization in terms of purchase, placement of purchase orders, follow-up, maintenance of smooth relations with suppliers, approval of payments to suppliers, evaluating and rating suppliers.

- **Stores management or management:**

This involves physical control of materials, preservation of stores, minimization of obsolescence and damage through timely disposal and efficient handling, maintenance of stores records, proper location and stocking. A store is also responsible for the physical verification of stocks and reconciling them with book figures. A store plays a vital role in the operations of a company.

- **Inventory control or management:**

Inventory generally refers to the materials in stock. It is also called the idle resource of an enterprise. Inventories represent those items, which are either stocked for sale or they are in the process of manufacturing or they are in the form of materials, which are yet to be utilized. The interval between receiving the purchased parts and transforming them into final products varies from industries to industries depending upon the cycle time of manufacture. It is, therefore, necessary to hold inventories of various kinds to act as a buffer between supply and demand for efficient operation of the system. Thus, an effective control on inventory is a must for smooth and efficient running of the production cycle with least interruptions.

Other related activities

- **3S**

Standardization: Standardization means producing maximum variety of products from the minimum variety of materials, parts, tools and processes. It is the process of establishing standards or units of measure by which extent, quality, quantity, value, performance etc. may be compared and measured.

Simplification: The concept of simplification is closely related to standardization. Simplification is the process of reducing the variety of products manufactured. Simplification is concerned with the reduction of product range, assemblies, parts, materials and design.

Specifications: It refers to a precise statement that formulizes the requirements of the customer. It may relate to a product, process or a service.

Example: