Warehouse Binner

(Job Role)

Qualification Pack: Ref. Id. LSC/Q2105
Sector: Logistics

Textbook for Class IX

विद्यया ऽमृतमश्नुते
एन सी ई आर टी
NCERT
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Foreword

The National Curriculum Framework–2005 (NCF–2005) recommends bringing work and education into the domain of the curricular, infusing it in all areas of learning while giving it an identity of its own at relevant stages. It explains that work transforms knowledge into experience and generates important personal and social values such as self-reliance, creativity and cooperation. Through work one learns to find one's place in the society. It is an educational activity with an inherent potential for inclusion. Therefore, an experience of involvement in productive work in an educational setting will make one appreciate the worth of social life and what is valued and appreciated in society. Work involves interaction with material or other people (mostly both), thus creating a deeper comprehension and increased practical knowledge of natural substances and social relationships.

Through work and education, school knowledge can be easily linked to learners' life outside the school. This also makes a departure from the legacy of bookish learning and bridges the gap between the school, home, community and the workplace. The NCF – 2005 also emphasises on Vocational Education and Training (VET) for all those children who wish to acquire additional skills and/or seek livelihood through vocational education after either discontinuing or completing their school education. VET is expected to provide a 'preferred and dignified' choice rather than a terminal or 'last-resort' option.

As a follow-up of this, NCERT has attempted to infuse work across the subject areas and also contributed in the development of the National Skill Qualification Framework (NSQF) for the country, which was notified on 27 December 2013. It is a quality assurance framework that organises all qualifications according to levels of knowledge, skills and attitude. These levels, graded from one to ten, are defined in terms of learning outcomes, which the learner must possess regardless of whether they are obtained through formal, non-formal or informal learning. The NSQF sets common principles and guidelines for a nationally recognised qualification system covering Schools, Vocational Education and Training Institutions, Technical Education Institutions, Colleges and Universities.

It is under this backdrop that Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), Bhopal, a constituent of NCERT has developed learning outcomes based modular curricula for the vocational subjects from Classes IX to XII. This has been developed

under the Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education of the Ministry of Education, erstwhile Ministry of Human Resource Development.

This textbook has been developed as per the learning outcomes based curriculum, keeping in view the National Occupational Standards (NOS) for the job role and to promote experiential learning related to the vocation. This will enable the students to acquire necessary skills, knowledge and attitude.

I acknowledge the contribution of the development team, reviewers and all the institutions and organisations, which have supported in the development of this textbook.

NCERT would welcome suggestions from students, teachers and parents, which would help us to further improve the quality of the material in subsequent editions.

HRUSHIKESH SENAPATY
Director
National Council of Educational
Research and Training

New Delhi
September 2020

About the Textbook

Strategies are considered the central source of the economic system, offering cost-effective affordable circulation of products on which other professional areas rely. The logistics market in India is moving rapidly, it is the interaction of facilities, technology and new types of companies, which describes whether the logistic market is able to help its customers reduce their costs, manage the time in the industry, and provide effective services. The recent Native Indian strategies industry consists of incoming and outgoing sections of the production and service supply stores.

Warehouse Binner in the logistics industry is also known as Binner, Floor Staff, Warehouse Associate. Individuals in this role need to bin items to put away into storage. Individuals are responsible for binning items according to an inventory list. Additional responsibilities could at times include moving cargo, re-packaging items and documenting cargo that has been moved. The difference in tasks performed under the warehouse Binner role thus varies according to the volume of operations, however the core function of the role is to bin items and put away into storage.

This student textbook has been developed with the contribution of the expertise from the subject and industry experts and academicians for making it a useful and inspiring teaching-learning resource material for the vocational students. Adequate care has been taken to align the content of the textbook with the National Occupational Standards (NOSs) for the job role so that the students acquire necessary knowledge and skills as per the performance criteria mentioned in the respective NOSs of the Qualification Pack (QP). Experts have reviewed the textbook to make sure that the content is not only aligned with the NOSs, but is also of high quality. The NOSs for the job role of warehouse Binner covered through this textbook are as follows:

1. LSC/N2101- Prepare for Binning
2. LSC/N2102- Perform Binning Activities

Unit 1 of the textbook deals with the basics of supply chain, logistics and warehousing, which covers Introduction to Supply Chain, Concepts of Logistics, Fundamentals of Warehousing and Functions and Classifications of Warehouses. Unit 2 focuses on storage of

goods in detail, covering the goods stored in the warehouse, listing and crosschecking of inventory, reporting to supervisor and packing of products. Unit 3 describes the bin management, which includes the binning and material required, storage system under binning, labelling and coding of goods; warehouse management and its activity. Unit 4 explains the methods and procedure of binning, storage and documentation of goods, risks involved in binning.

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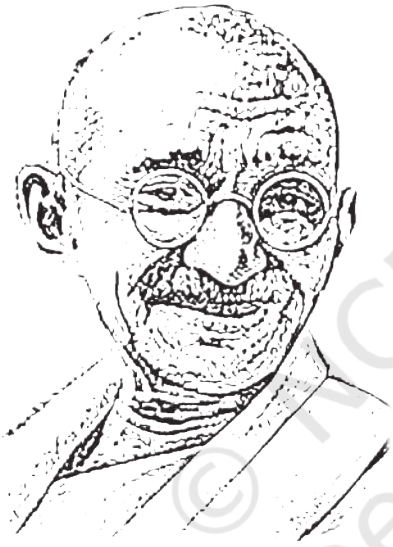
Do You Know ?

According to the 86th Constitutional Amendment Act, 2002, free and compulsory education for all children in 6-14 year age group is now a Fundamental Right under Article 21-A of the Constitution.

EDUCATION IS NEITHER A PRIVILEGE NOR FAVOUR BUT A BASIC HUMAN RIGHT TO WHICH ALL GIRLS AND WOMEN ARE ENTITLED

Give Girls Their Chance !

Contents



...Ahimsa is the very definition of woman and there is no place for untruth in her heart. If she is true to herself she is no longer Abala – the weak, but she is Sabala – the strong.....

Unit 1

Supply Chain, Logistics and Warehousing

Supply chain consists of the steps taken by any business to serve its customers. The present business environment has changed drastically with managers giving more emphasis to supply chain. Efficient supply chain improves the availability of the products *viz-a-viz* the company's profit. Companies must seek new ways to improve supply chain, like weight and route planning and network design. Supply chain helps to stock different categories. If managed in an effective and efficient manner supply chain will help companies in earning profits.

Logistics operations have their own significance. It is important for the product to be made available easily and widely in the markets because faster product availability is the basis of growing sales. For example, two products with the same specification are launched at the same time by two different companies. After one or two months, there is shortage of one product in the market. In that case, there will be a substantial profit advantage for the other product during that extra time. This results in the customers slowly shifting their preferences to the other company's product and that company will get more orders and more market share. Thus, availability of the products can break a sale which ultimately depends on the supply chain.

Session 1: Introduction to Supply Chain

Logistics is the process of planning, implementing and controlling procedures for the efficient and effective transportation and storage of goods.

Concept of supply chain

The success of the business often depends on the success of the supply chain. Supply chain management deals with—

(a) Material flow
(b) Information flow
(c) Financial flow

Material flow

This physical flow of products from the supplier/seller/buyer to the customer is one directional or unidirectional. (Fig. 1.1)

Fig. 1.1: Material Flow in Supply Chain

Information flow

Here the information flows from the supplier/seller to the customer/buyer, and then from the customer to the supplier as shown in Fig. 1.2.

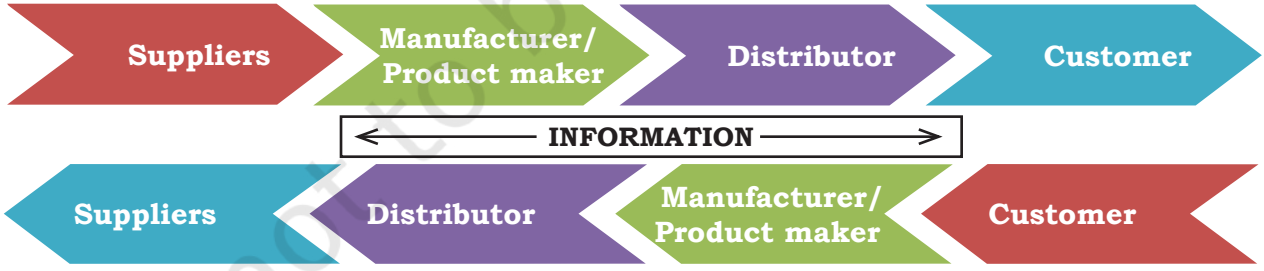


Fig. 1.2: Information Flow in Supply Chain

Financial flow

Here, the money flows from the customer to the supplier, wherein the customer accepts the product and confirms that the payment goes to the suppliers as shown in Fig. 1.3.

Fig. 1.3: Financial Flow in Supply Chain

Functions of supply chain

The supply chain consists of the manufacturer, suppliers, retailers, customers, transporters, warehouses, etc. Functions of supply chain are as follows—

- Inventory or record management
- Transportation service procurement
- Material handling
- Inbound transportation
- Transportation operation management
- Warehouse management
- Customer service
- Order processing and customer service

Kinds of supply chain

The common models of supply chain are—

- Integrated make-to-stock
- Build-to-order
- Continuous replenishment
- Channel assembly

Integrated make-to-stock model

This model is used to track client request in real time and production process, maintain finished goods inventory and storage of raw material.

Build-to-order model

In this, the company assembles the components to produce finished goods immediately upon receiving the order.

Continuous replenishment model

In this model, the company works with intermediaries and suppliers to constantly replenish their inventory. This is useful for the supply of products with stable demand. For example, circulation of prescribed medicines.

Channel assembly model

This model is a modification of build-to-order model. The fragments of the product are collected and assembled as the product moves through the distribution channel and it is called channel assembly model.

Importance of supply chain

The supply chain is important because it—

- helps to reduce inventory cost.
- helps to boost customer service and improve customer satisfaction.
- maintains better trust between partners.
- provides efficient manufacturing strategy.
- improves process integration.
- increases cash flow.
- reduces operating cost.
- improves financial position by decreasing fixed assets.
- improves quality and gives higher profit margin
- protects traditional freedom and development

Logistics

Logistics is the process involved in moving the goods from the point of origin to the point of consumption.

Any organisation has to improve and develop its supply chain and logistics (SC&L) processes to be successful and gain competitive advantage in the market. Measuring delivery performance is very important for a company to make its logistics system very effective. Logistics has been divided into two broad categories—

Inbound logistics

It is the most important process of logistics concerned with the movement of purchased raw material from the suppliers to the company.

Outbound logistics

It is the movement of finished products from the manufacturing unit (factory) to the end user (customer).

Practical Exercise

Activity 1

Prepare a chart showing the basic functions and requirements of supply chain and logistics.

Material Required

Note Book, Pen/Pencil, Check list

Procedure

1. Visit the warehouse along with your peers.
2. Meet the inventory executives and others and greet them.
3. Take a round of the warehouse and enquire from the manager about the following:
   - Suppliers of various products and their locations
   - Storage of the products
   - Local distributors of these products and their locations
   - Potential customers
   - Transportation facility used for the products
4. Discuss with the executive(s) about supply chain practices.
5. Show your notes to the executive and confirm that they are correct.
6. Prepare a report and discuss with friends and show it to the teacher.
7. Discuss your report in the class.

Activity 2

Visit to a post office to understand the difference between the public and private sector functionality.

Material Required

Note Book, Pen/Pencil, Checklist

Procedure

1. Visit the post office along with you peers.
2. Meet the postmaster and other employees in the post office.
3. Take a tour of the post office and enquire the post master about the following:
   - Point of collection and their locations
   - Storage facilities available for letters
   - Methods and criterion used to sort letters
   - Movement of letters (transport) and their final destinations
   - Distribution of letters to the recipients
   - Problems faced by postmen and other employees while working in the post office.
4. Discuss the working of post office with the employees.
5. Show your notes to the postmaster and confirm that they are correct.
6. Prepare a report and discuss it with friends. Also, show it to the teacher and present it in the classroom.

Check Your Progress

A. Fill in the Blanks

1. Supply chain consists of suppliers, manufacturers, distributors, _____ customers.
2. There are two types of logistics; inbound and _____.
3. Warehouse is a part of _____.
4. Decision in regard to inventory and warehousing facilities is a part of _____ decision.
5. Production and distribution schedules are the part of_____ decisions.
6. Flow of information in the supply chain is _____.
7. Logistics is the relation between the _____ and the operating activity of the business.

B. Multiple Choice Questions

1. The purpose of Supply Chain Management is to _____.
   (a) be responsible for customer satisfaction
   (b) increase product quality
   (c) integrate demand and supply
   (d) increase production
2. Logistics is involved with the onward and opposite flow of _____.
   (a) goods
   (b) services
   (c) cash
   (d) All of the above
3. The main decision areas in Supply Chain Management are _____.
   (a) location, production, distribution, inventory
   (b) planning, production, distribution, inventory
   (c) location, production, scheduling, inventory
   (d) location, production, distribution, marketing

C. True or False

1. Supply chains are becoming more complex and dynamic.
2. The information flows from seller to customer and then from customer to supplier.
3. Supply chain supports a company by reducing its inventory cost.
4. Inbound logistics is related to the movement of purchased raw material from suppliers to the company.
5. Outbound logistics is the movement of finished products from manufacturing unit to the final user.

D. Short Answer Questions

1. Define supply chain.
2. Explain various types of supply chain.
3. Discuss the three types of flow related to supply chain.
4. Deliberate the importance of supply chain.

E. Answer in Brief

1. Draw flow charts of material flow and financial flow.
2. Explain the functions of supply chain management with an example.
3. Demonstrate the importance of supply chain with an example.

SESSION 2: CONCEPTS OF LOGISTICS

Logistics is the process of planning, implementing and controlling procedures for the efficient and effective transportation and storage of goods. It includes movement of services and related information from the point of origin to the point of consumption. Its goal is to successfully meet the customer's requirements. This definition includes inbound, outbound, internal and external movements.

According to the Council of Logistics Management, logistics is the management process of planning, implementing, and controlling the physical and information flow concerned with material and final goods from the point of origin to the point of usage. International logistics involves the management of these resources in a company's supply chain across at least one international border.

Functions of logistics

The functions of logistics are given in the following chart (Fig. 1.4.)

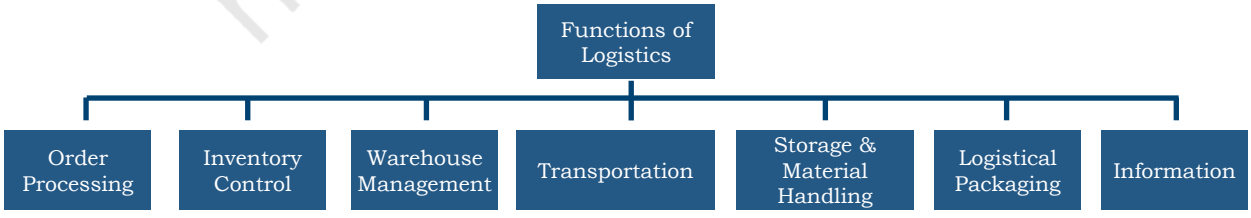


Fig. 1.4: Functions of Logistics

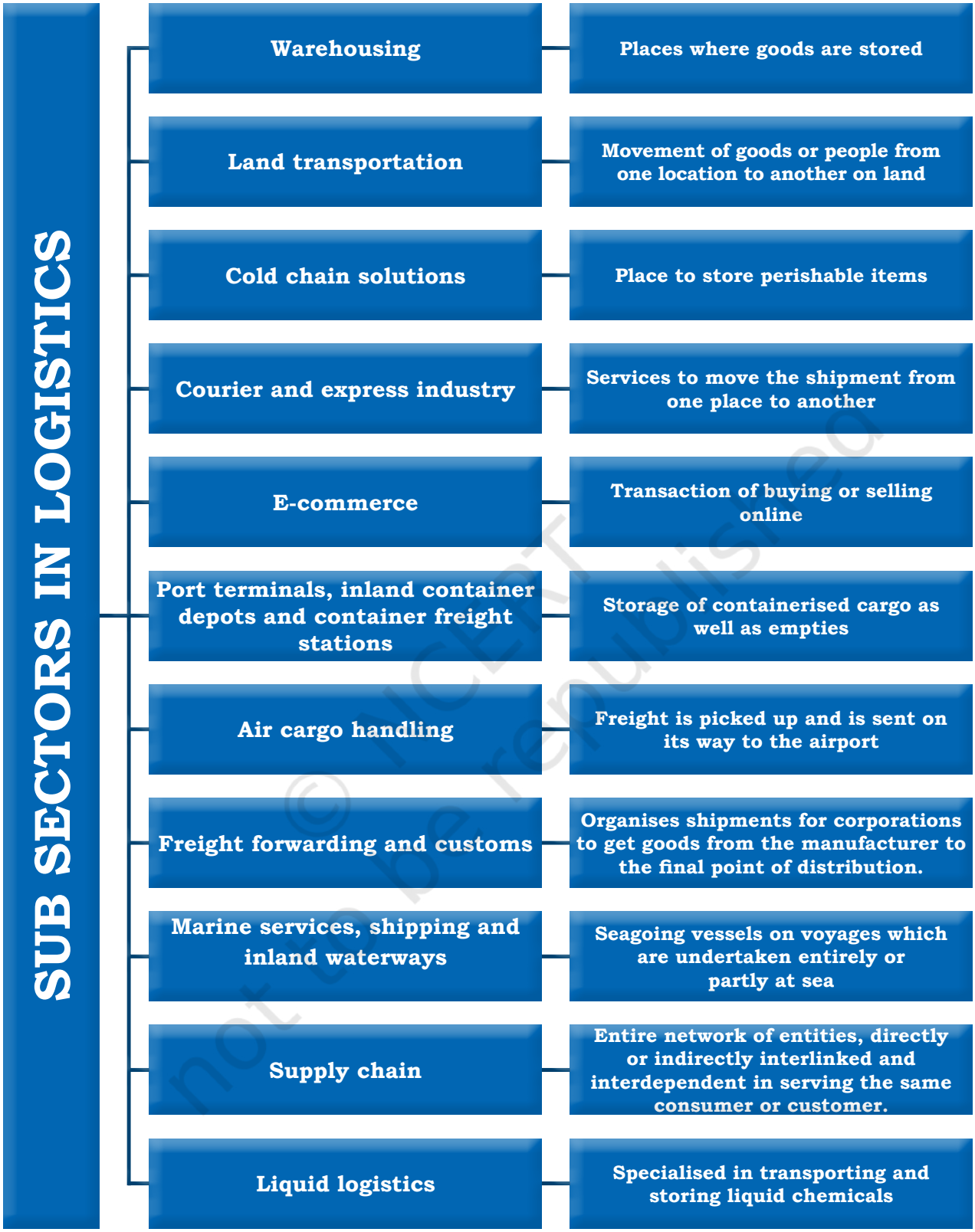


Fig. 1.5: Sub Sectors in Logistics

Order processing

It is a transaction between two parties, i.e., Purchase Order (PO) placed by a buyer to a seller. The process document holds its own importance because it has direct relation to the order. This order document indicates order date and delivery date to the customer.

Inventory control

Inventory control is the process of managing the inventory and striking a balance between the customer and the market.

Warehousing

Warehousing is a place used for storage. The finished goods or raw material are kept at this place.
The features of warehousing are—

- locality of warehouses and facilities
- number of warehouses
- size, mass or area of the warehouse
- warehouse layout
- ownership of warehouse

Transportation

The physical movement of goods from one place to another is known as the transportation of goods.

Storage and material management

The arrangement of goods in a specified area is known as storage material management.

Packaging

Packaging is the function of protecting the goods in the physical distribution process. It extends the life of the product without any damage.

Information

Information is shared from one place to another by using information technology tools.

Subsectors in logistics

As per the Logistics Sector Skill Council, there are 11 sub sectors operating in the entire logistics process, which are shown in Fig. 1.5.

The detailed information about sub sectors of the logistics sector is elaborated as follows.

Fig. 1.6: Warehousing — Storage and Packaging

Warehousing—storage and packaging (including tertiary packaging)

In traditional warehousing, goods of durable nature were generally kept open. But in modern day warehousing, the goods are kept with suitable packaging (Fig.1.6). Therefore, packaging and storage are integral parts of warehousing.

Land transportation (including commercial vehicle drivers for cargo)

Land transportation, referred to as ground transport, covers the movement of goods from one location to another on land either by railways or by roadways (Fig. 1.7(a) and 1.7(b)).

Fig. 1.7(a) Land Transportation: Roadways

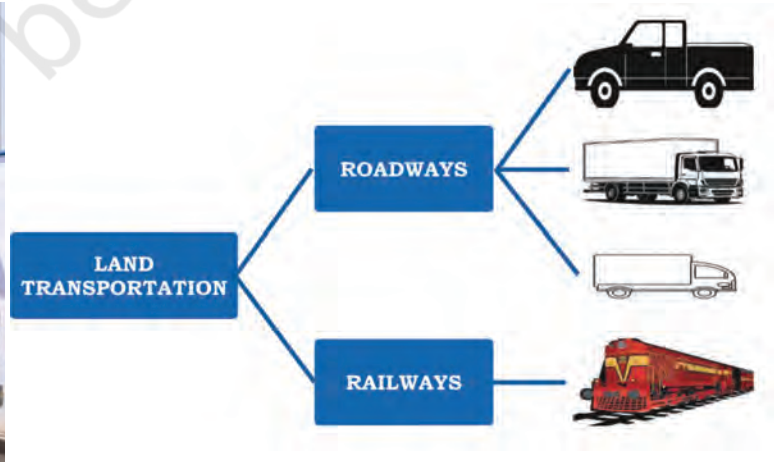


Fig. 1.7(b): Vehicles used in land transportation

Cold storage or cold chain solutions

A cold storage or cold chain is a temperature-controlled supply chain shown in figures 1.8(a) and 1.8(b). This is used to store various perishable products like fruits, vegetables, juices, etc.

Fig. 1.8(a): Cold Storage

Fig. 1.8(b): Cold Storage and Cold Chain Solution

Courier and express industry

Courier is a service industry under which the transfer of goods and services is done (figure 1.9). It is an everyday service.

Fig. 1.9: Courier Services

E-commerce (e-logistics)

E-commerce is an activity of using e-services (internet and mobile). E-logistics is a combination of message computing and collective technologies to deliver the right products in right quantities at the right place and time to the right customer (figure 1.10).

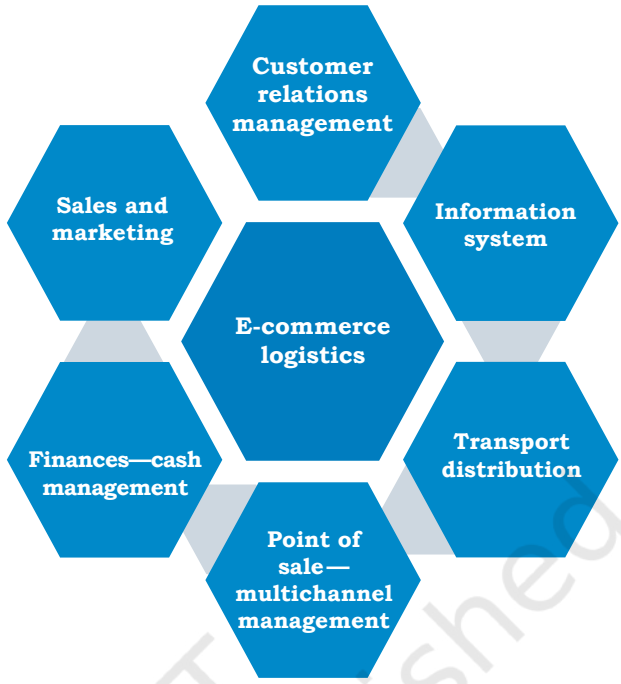


Fig. 1.10: E-commerce

Port terminals, inland container depots and container freight stations

- Port Terminals: A port is a location on a coast, where ships can dock and transfer people or cargo to or from the land (figure 1.11a).
- Inland Container Depots (ICDs): ICDs, also called as dry ports, are prepared for handling and storage of containers (figure 1.11b).
- Container Freight Station (CFS): A facility where freight shipments are combined or de-consolidated and showed between transport legs (figure 1.11c and 1. 11d).

Fig. 1.11(a): Port Terminals

Fig. 1.11(b): Inland Container Depot

Fig. 1.11(c): Forklift for putting Goods in Container

Fig. 1.11(d): Container Freight Station

Air cargo handling (other than tarmac side operations)

Air cargo is the term used to refer to the goods through aircraft. Goods which have less weight and are highly valuable are sent through air cargo (figure 1.12).

Fig. 1.12: Air Cargo and its handling

Freight forwarding and customs

Freight forwarding refers to the managing and shipping of goods from one destination to another via various carriers, such as, air, marine, railway or highway (figure 1.13).

Fig. 1.13: Coordination of freights

Marine services, shipping and inland waterways

Services related to the port, conducted to ensure the safe movement of goods through ships are called marine services (figure 1.14).

The terminology 'shipping' is not only limited to the seaborne trade but has progressed to the land and air based transportation of goods.

Inland waterways are a network of canals, rivers, backwaters and creeks which can be used for land transportation (roads and rails) (Figure 1.15).

Fig. 1.14: Marine Services at Sea Port

Fig. 1.15: Shipping the Goods

Supply chain

A supply chain is a network among a business organisation and its suppliers to produce and distribute the precise product to the end user. This network comprises different people, entities, activities, resources and information. The supply chain furthermore represents the stages it takes to acquire the product or service from its unique state to the customer.

Companies develop supply chains so that can decrease their costs and keep up to the competition with their business rivals. (Figure 1.16)

Fig. 1.16: Supply Chain Process

Liquid logistics

It is associated with the movement of liquids or gases from one place to another like petrol, diesel, gases, etc. It is a specialised material-handling and transportation discipline (Fig. 1.17). Precaution is written on the vessels to warn people to handle it with care because of the risky nature of the products.

Fig. 1.17: Liquid Logistics Vessels

Correlation of subsectors in logistics

The sub sectors of logistics are interrelated. Each sub sector is directly or indirectly interdependent. Logistics help to facilitate the goods movement from the start to the end (Figure 1.18).

Relationship between logistics and warehousing

Logistics is the process of scheduling, supervising, and application of goods from the storage to selling of the product to the end customer. Warehousing means holding inventory in a specific location. Positive relation between logistics and warehousing is the equalising point where things and ideas can be delivered from production to the user whereas the difference lies only in aspect. Logistics and warehousing have similar functions, which facilitate the supply chain.

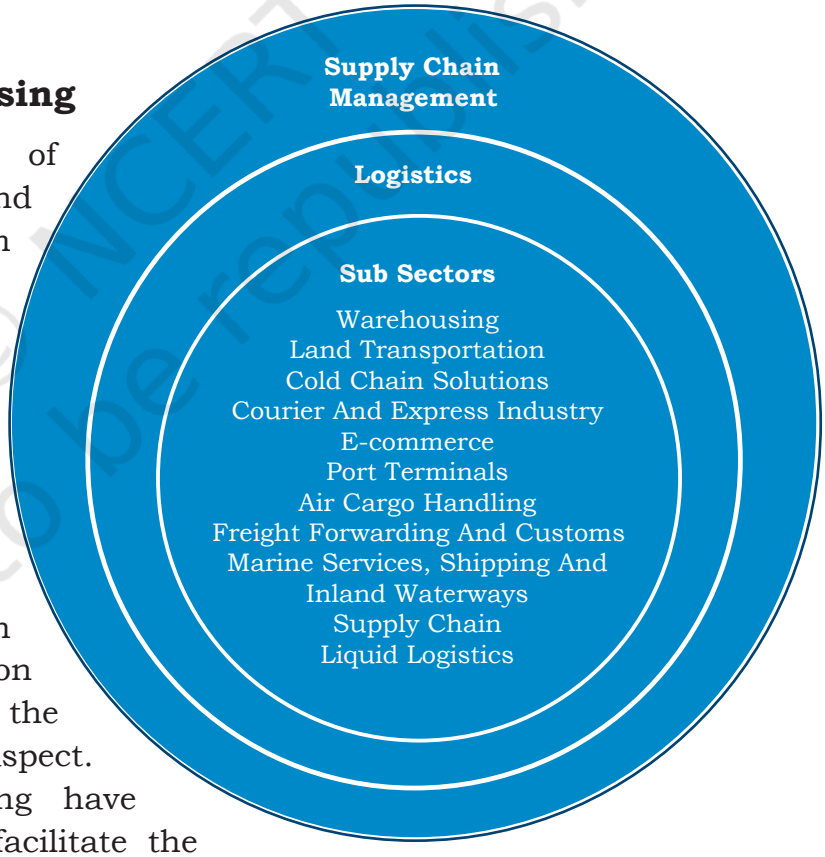


Fig. 1.18: Correlation of Sub Sectors

Practical Exercise

Activity 1

Draw a flow chart containing the sub sectors of the warehousing industry.

Material required

Check list, notepad, pen/pencil, drawing sheet, colour pencils, etc.

Procedure

1. Collect the material required to make the flow chart.
2. Draw a chart containing sub sectors of warehousing on a sheet.
3. Check the characteristics from the textbook and from what the teacher has taught in class.
4. Ensure that you complete your work.
5. Discuss with your classmates in presence of your teacher.
6. Write the conclusion.

Activity 2

Draw a flow chart to correlate logistics with warehousing.

Material required

Check list, notepad, pen /pencil, drawing sheet, colour pencils.

Procedure

1. Collect the material required to draw the flow chart.
2. Draw a chart desribing warehousing and correlate it with logistics industry.
3. Check the characteristics from the textbook and from what the teacher has taught in class.
4. Ensure that you complete your work.
5. Discuss with your classmates in front of the teacher.
6. Write down the conclusion.

Check Your Progress

A. Fill in the Blanks

1. _____ is the act of storing goods.
2. Movement of goods from one place to another place is called _____ transportation.
3. Warehouse is an important activity of _____ function.
4. A _____ supply chain is temperature-controlled.
5. A _____ facilitates the stacking and unloading of goods at ships.

6. _____ is carried in an aircraft.
7. _____is a specialised material-handling discipline used for liquid products through a supply chain.

B. Multiple Choice Questions

1. The process of logistics is _____.
   (a) planning
   (b) implementing
   (c) controlling
   (d) All of the above
2. _____is a critical component in the physical distribution of a product.
   (a) Industrial packaging
   (b) Logistical packaging
   (c) A and B both
   (d) A only
3. How many sub-sectors are there in logistics?
   (a) 10
   (b) 20
   (c) 11
   (d) 12
4. A cold chain is a _____ controlled supply chain.
   (a) temperature
   (b) monitor
   (c) environment
   (d) None
5. Air cargo comprises of _____.
   (a) air freight
   (b) air express
   (c) airmail
   (d) All the above

C. State whether True or False

1. A warehouse cannot store goods.
2. Supply chain and logistics are related to each other.
3. The term 'shipping' is used to explain the movement of goods through ships between two points.
4. Marine services are port-related activities.
5. Customs department is authorised by the government for implementing the policies.
6. Air cargo is carried in an aircraft.

D. Answer in Brief

1. What is logistics?
2. Explain briefly about the sub-sectors of logistics.
3. What is the difference between land logistics and liquid logistics?

4. What is a marine service?
5. Draw a flow chart of supply chain process.

E. Check your Performance

1. Draw a flow chart containing the list of subsectors in logistics.
2. Differentiate between warehousing and logistics.

Session 3: Fundamentals of Warehousing

Storage is as important as the manufacturing, marketing and transportation of goods. Storage involves receipt, identification, verification, sorting, putting away and retrieval for issue and even maintenance of goods. Thus, warehousing is a combination of various activities performed in accordance with each other. This session provides an insight into the basics of warehousing.

Meaning and definition of warehousing

Any goods, whether raw material or finished products, have to be stored during the course of production, consumption or delivery. While going from a manufacturer to the final consumer, a product gets transferred at various levels and it has to be stored and transported from one level to another, as shown in Figure 1.19.

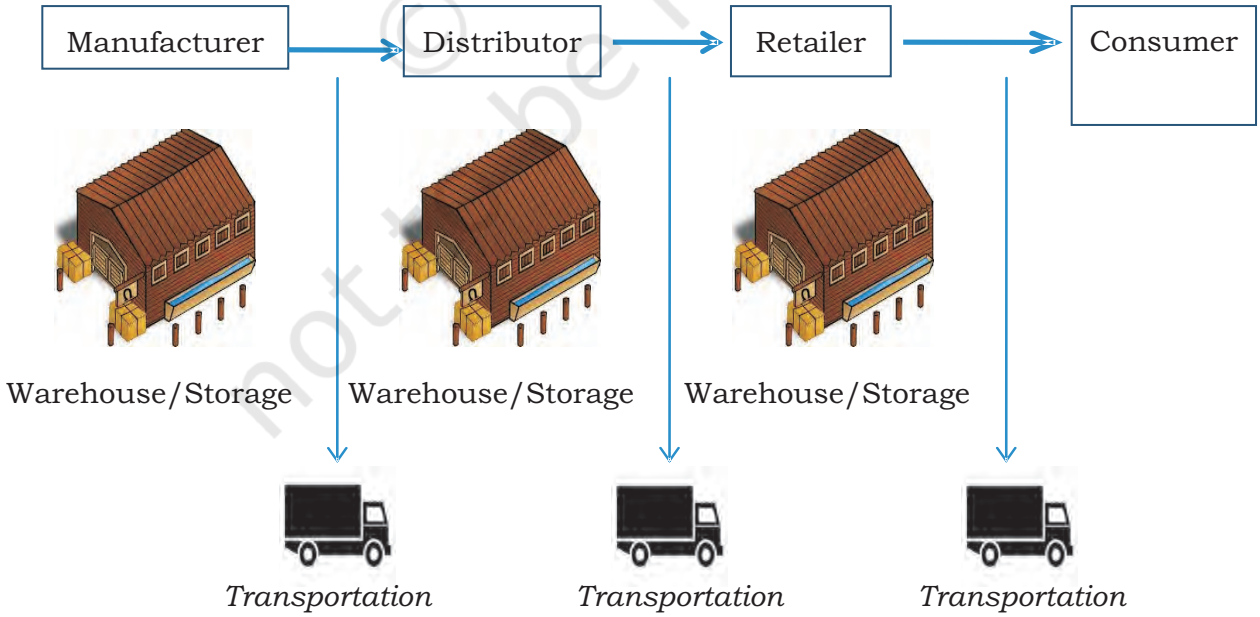


Fig. 1.19: Warehousing at Different Stages

This process of storage is termed as warehousing, and the place where the goods are stored is known as a 'warehouse'. So, we can say;

Warehouse is a planned commercial space for well-organised storage and management of products. Warehousing is the process of storage, handling and management of goods in a warehouse.

Warehousing is an important function of logistics. This facility is availed by the traders, manufacturers, exporters, importers, transporters, agriculturists, etc. Thus, it can be said that a warehouse provides storage solutions to a number of clients having an extensive range of products. There are specialised warehouses for specific kind of products.

Necessities for warehousing

Storage is an essential activity for many business houses. Goods are stored to avoid sudden shortage. In order to avoid a situation, such as, price rise or sudden surge in demand, warehousing of goods is a good idea. Raw material also needs to be stored to maintain the production cycle during off seasons.

Warehousing is needed—

- to safeguard against the condition of loss of production.
- to achieve mass production in order to reduce overall cost.
- to acquire the goods in bulk instead of buying in small batches and pay more.
- to provide sufficient stock during uncontrollable situations, such as, sudden price rise or variations in demand and supply.
- to maintain the availability of spares and adequate service items.
- to provide a safe storage environment to the goods with a guard from damage, deterioration and unauthorised usage.
- to keep proper inventory record.
- to enhance a company's goodwill with efficient warehouse handling systems.

Types of warehouses

There are various types of warehouses available in India, which can be classified as—

1. Private

The warehouses which are owned and managed by the manufacturers or traders to exclusively store their own stock of goods are known as private warehouses.

2. Public

The warehouses which are used to store goods of the general public are known as public warehouses.

3. Government

The warehouses which are owned, managed and controlled by central or state governments or public corporations or local authorities are called government warehouses.

4. Bonded

A bonded warehouse is a secure warehouse in which goods are stored until customs duty is paid or the goods are cleared for export.

5. Co-operative

The warehouses which are owned, managed and controlled by co-operative societies are called co-operative warehouses.

Characteristics of ideal warehouses

A warehouse is said be an ideal one if it possesses the following characteristics—

- The warehouse should be located at a convenient place near highways, railway stations, airports and seaports where goods can be loaded and unloaded easily.
- Mechanical appliances should be available for loading and unloading the goods. This reduces the wastage in handling, and also minimises the handling costs.
- Adequate space should be available inside the building to keep the goods in proper order.

- Warehouses meant for the preservation of perishable items like fruits, vegetables, eggs, butter, etc., should have cold storage facilities.
- Proper arrangement should be there to protect the goods from sunlight, rain, wind, dust, moisture and pests.
- Sufficient parking space should be there inside the premises to facilitate easy and quick loading and unloading of goods.
- Round the clock security arrangement should be there to avoid the theft of goods.
- The building should be fitted with latest fire-fighting equipment to avoid the loss of goods due to fire.

Benefits of warehousing

The benefits of warehousing are given below and shown in Figure 1.20.

- Location advantage: Warehousing provides a central location for storing and distributing products. This location is generally at a reasonable distance from the supplier and the buyer.
- Storage benefits: Goods can be stored in a controlled and safe location. Even if the consumable good is of seasonal nature, it can be produced during the whole year and can be stored for sale during the season of demand.
- Consolidation: Goods from several suppliers can be received in one warehouse and can be transported as a single bulk consignment to the buyer.
- Value addition: Value addition of the products such as packaging and

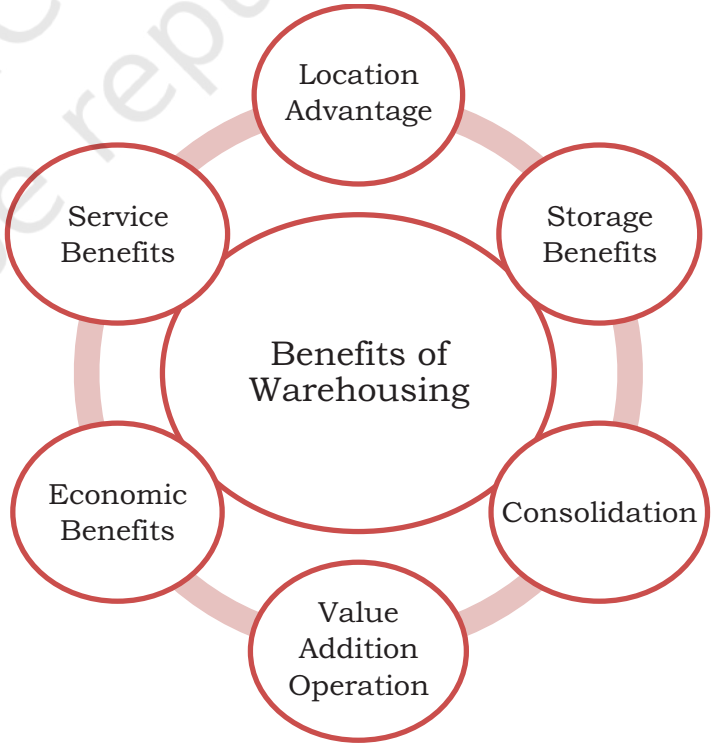


Fig. 1.20: Benefits of Warehousing

labelling is also done in the warehouse to reduce the operational time.

- Economic Benefits: Warehouses provide economies of scale (benefit of large scale production) to the manufacturer and buyer. This reduces their cost of operation.
- Service benefits: It provides the benefit of safety stocking.

Fig. 1.21: Aims of Warehousing

Aims of warehousing

1. Storage—keeping goods in a safe and secured environment.
2. Safety—to ensure damage free and error free storage environment.
3. Utilisation of resources—for effective distribution of stored material.
4. Facing unprecedented conditions—For overcoming the situations, such as, sudden shortage of raw material.

Aims of warehousing are summarised in Figure 1.21.

Principles of warehousing

An effective warehousing should be based on the following principles—

1. Utilisation of space: Complete space in a warehouse should be utilised and no space should be wasted. Vacant space in a warehouse means loss of revenue to the warehouse.
2. Optimum stock levels: Both excess stock level, as well as, low stock level are disadvantageous for the warehouse. Excess stock directly leads to extra cost, and holding less stock results in loss of sales. Optimum quantity of stock has to be maintained.
3. Process orders quickly: Faster order processing of a company largely depends upon an efficient warehousing system. The process of receipt,

binning, value addition (packaging and labelling), despatch and transportation should be conducted uninterrupted and in connection with each other to avoid delays. Warehouse Management System (WMS) helps a lot in speedy processing of orders.

4. Timely entry-exit of products: The time between order receipt and delivered goods (turn-around time) should be minimised so as to achieve efficiency of operation.
5. Control the movement and storage of material: Accurate detailing of stock levels and the correct fulfillment of orders is an important aspect of assuring effective warehouse operations. Controlling stock and recording the incoming and outgoing of cargo along with maintaining conducive storage conditions is an important principle of warehousing.
6. Warehousing works in a system: Warehousing is an important aspect of the supply chain. The other aspects of supply chain, such as, logistics, material management, physical supply of goods, etc., work hand in hand with each other and no function can work in isolation. All components have to work together in consensus to ensure fruitful completion of the logistics process.
7. The basic motive of warehousing is to store goods. There are various other activities, such as, value addition, packaging, labelling, etc., that are conducted in a warehouse. Warehousing operations involve successful completion of all allied functions along with the storage. Thus, we can say that warehousing is a complete functional system. There are different types of warehouses depending upon the type of goods they store and type of facilities they offer. The next session gives an insight about the different types of warehouses used during the logistics process.

Practical Exercise

Activity 1

Visit a warehouse and note down the fundamental aspects of warehousing.

Material required

Check list, notepad, pen/pencil

Procedure

1. Plan a visit to the warehouse.
2. Greet the warehouse managers and executives including all who are present there.
3. Note down the different activities of the warehouse.
4. Understand the fundamental aspects of warehousing from the people working at the warehouse.
5. Note down the fundamentals in a notebook, review it with friends and finalises by consulting the executives.
6. Discuss the fundamentals of warehousing in the class.
7. Ask the teacher to comment on the discussion.
8. Teacher will conclude the discussion.

Activity 2

Visit a warehouse of FCI to identify the needs of warehousing.

Material required

Notepad, pen/pencil, check list

Procedure

1. Visit a warehouse of FCI.
2. Greet the warehouse managers and executives and all who are present there.
3. Request them to explain the needs of warehousing.
4. Note down the needs of FCI warehousing and review it with friends and finalise in consultation with the executives.
5. Discuss the needs of warehousing in the class.
6. Ask the teacher to comment on the discussion.
7. Teacher will conclude the discussion.

Activity 3

Prepare a report on the benefits of a warehouse.

Material required

Notepad, pen/pencil, check list

Procedure

1. Arrange a group discussion in the class.
2. Students will give their views on warehouses.
3. Note down the several benefits of warehousing.
4. Prepare a short report on its benefits.
5. Submit the report to the class teacher.
6. Teacher will analyse the report and write comments.

Check your progress

A. Fill in the Blanks

1. The process of storage is termed as _____ and the place where the goods are stored is called as _____.
2. There are _____ warehouses for specific kind of products.
3. Goods from different suppliers can be received in one warehouse and can be transported as a single bulk consignment to the buyer. This is called_____.
4. The time between receipt of delivery and receipt of order is called _____.
5. Warehousing is an important activity of _____ function.

B. Multiple Choice Questions

1. Storage of goods is as important as_____.
   (a) manufacturing
   (b) marketing
   (c) transportation
   (d) All of the above
2. Warehouse is a planned _____ space for efficient storage.
   (a) commercial
   (b) official
   (c) both (a) and (b)
   (d) None of the above
3. The benefits of warehousing are _____.
   (a) economic
   (b) storage
   (c) service
   (d) All of the above
4. The basic motive of warehousing is to _____.
   (a) store goods
   (b) lose goods
   (c) damage goods
   (d) store goods affected by pesticides
5. Warehousing facility is availed by _____.
   (a) trader
   (b) manufacturer
   (c) importer
   (d) exporter

C. State whether True or False

1. Warehouse provides storage solutions for a large number of clients.

2. Packing is not a function of warehouse.
3. Warehousing is an integral part of logistics.
4. Warehousing works as a part of a system.
5. Effective resource utilisation is not an aim of warehousing.

D. Answer in Brief

1. What is warehousing?
2. Discuss the aims of warehousing.
3. What are the various benefits attached to the warehousing process?
4. Discuss the various principles of warehousing.
5. Write a short note on the needs of warehousing.

E. Check your Performance

1. Draw a chart on the services of warehouse and display in the class.
2. Identify the various components of the warehouse design.
3. Demonstrate the operational steps followed in warehousing.

SESSION 4: FUNCTIONS AND CLASSIFICATION OF WAREHOUSES

Warehousing is often seen as contributing to the storage of goods only. A warehouse serves as a storage and processing area and also sometimes as the location for reaching the customers. There are various operations performed in a warehouse. It is important to understand the overall warehouse operations and the various functions performed in a warehouse.

Warehouses can be categorised on the basis of the type of product, value-added services required, duty or taxes payable, location, etc. This session talks about different types of warehouses and the features attached to them. Choosing the correct category of warehouse is important for the storage and handling of goods.

Functions of warehousing

Storage is not the only purpose of setting up a warehouse. But, there are various other activities that take place in a warehouse, such as, security, processing, value addition like packaging, etc. So, in broad terms

these functions are also included in warehousing. It is very important to understand the various functions performed in a warehouse.

Following are the three primary functions performed in a warehouse.

Storage	Movement	Information Management
• Stock of products at the warehouse – Order or consignment – Shipping – Receiving – Put-away	• Put the products at the selected place • Rearranging goods • Relocating by using transport • Receipt of goods from place of production • Shifting to the warehouse	• Record keeping • Documentation • Application of information technology and software for information management

The secondary functions (Fig. 1.22) of warehouse are—

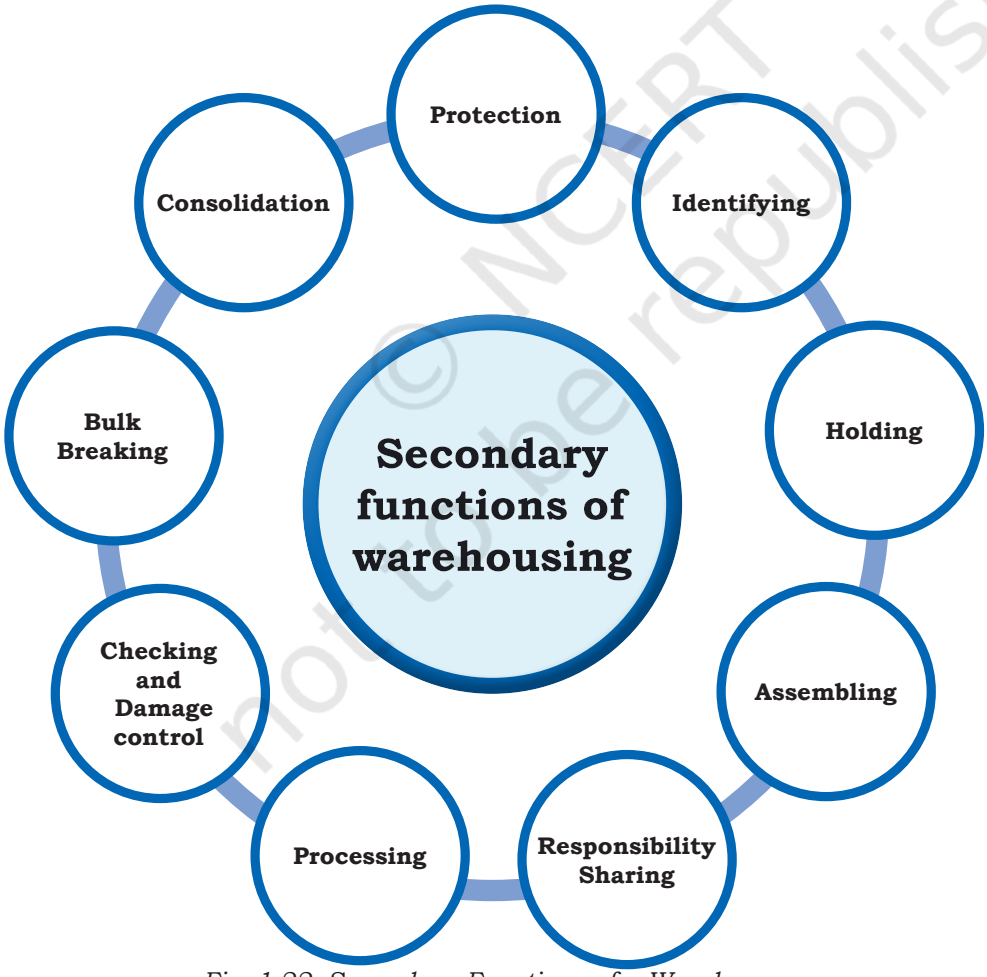


Fig. 1.22: Secondary Functions of a Warehouse

1. Protection of goods: Warehouses provide protection to goods against loss and damage arising due to theft, fire or mishandling.
2. Responsibility and liability sharing: The responsibility of a binner is to protect the goods from damage and provide security. All these functions are taken up by the warehouse, once the goods enter into the premises.
3. Processing: Warehouse also provides an option of processing to the manufacturers. Certain goods have to be worked upon before final consumption, such as, paddy is polished, processed foods are labelled, etc.
4. Checking and damage control: Many times goods are checked for damage or maintenance in the warehouse. Preventative and corrective measures are implemented accordingly on the products. For example, anti-termite treatment on wooden products, pest control treatment on agro-based products, anti-rust coating on iron and metallic products, etc.
5. Breaking the bulk: Goods are generally received in bulk inside a warehouse. These are distributed in small batches as and when required by the distributor. Dividing the bulk lot into smaller batches is termed as breaking the bulk.
6. Consolidation: Small lots of goods are combined to form a single big lot. Warehouses often act as a consolidation point where supplies from various suppliers are collected and combined into a single lot for further transportation to a single buyer.
7. Identifying: Warehouses receive goods and identify them to store at a particular location and space suitable for the inventory.
8. Holding: Holding of goods is a major function of the warehouse. Goods received in a warehouse are meant for further transportation in future. But sometimes, due to different reasons goods remain idle in a warehouse.
9. Assembling: Warehouses often act as an assembly point where supplies from various suppliers are

collected and combined into a single lot for further transportation to a single buyer.

Activity for functions of the warehouse

1. Inbound receipt of goods from upstream suppliers.
2. Identifying the merchandises, matching them to orders for finding their use.
3. Unloading material from delivery vehicle.
4. Doing necessary checks on quality, quantity and condition.
5. Labelling materials so that they can be identified easily. Usually this can be completed through bar codes.
6. Sorting the goods as needed.
7. Moving goods to bulk storage area.
8. Holding them in stock until needed.
9. When necessary, moving goods from bulk storage area to a smaller picking store.
10. Picking materials from this store to meet orders.
11. Moving the materials to a marshalling area.
12. Assembling materials into orders.
13. Packing and packaging as necessary.
14. Loading delivery vehicles and despatching orders.
15. Controlling all communication and related systems, such as, inventory control and finance.
16. Consolidation activity and break-bulk activities also form a part of warehousing activities apart from regular activities.

As warehousing is a system, it cannot be performed individually in isolation. All the functions have to go hand in hand to ensure efficient completion of the warehousing process. The overall objective of efficient storage and accruing customer satisfaction can be achieved only when all the functions are performed in order and to the fulfilment of their objectives.

Classification of warehouses

There are a number of ways in which warehouses can be classified. The selection of warehouse is based on

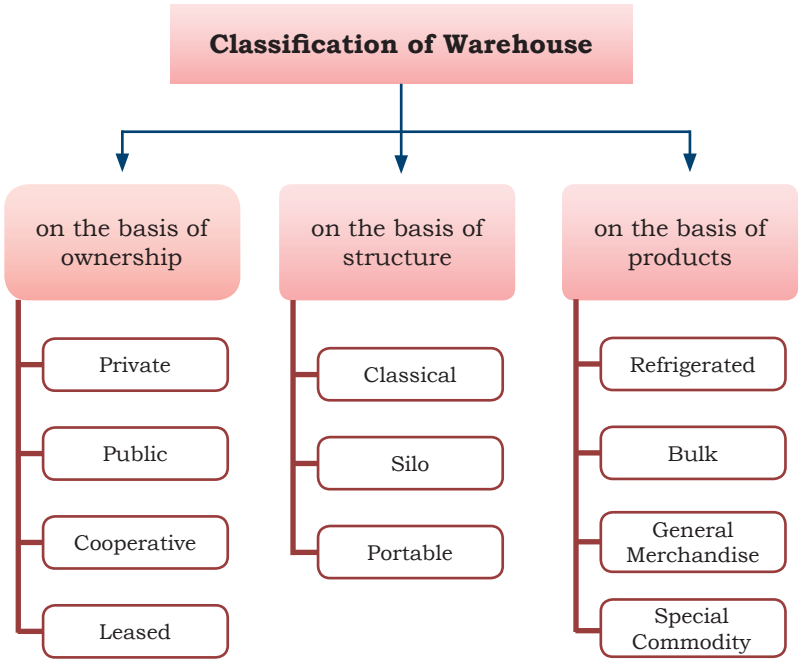


Fig. 1.23: Classification of a Warehouse

consideration of several factors, such as, type of product, location, structure, etc., as shown in Figure 1.23.

Classification on the basis of ownership

(a) Private warehouse: This is owned by a firm or a company. Large scale companies with large scale operations setup their own warehouse.

(b) Public warehouse: These are government owned warehouses. Storage space is booked by any company or business entity and the due fee is paid to the warehouse. Central Warehousing Corporation is an example of such a warehouse in India. These are the best warehousing agencies in India, and operates 438 warehouses across the country.

(c) Cooperative Warehouse: These are owned, controlled and managed by co-operative societies. These provide storage space to members at a nominal fee.

(d) Leased Warehouse: This is a warehouse which can be hired (whole premises) on lease or rent as and when required.

Classification on the basis of structure

(a) Classical Warehouse: It is a single building divided into rooms or sections by concrete walls. It is a common form of warehouse.

(b) Silo: These are vertical units with options to store bulk items. Use of mechanical devices is highly prevalent. These are used for bulk storage of grain, coal, cement, carbon black, woodchips, food products and sawdust. (Fig.1.24)

Fig. 1.24: Modern Silo Warehouse

(c) Portable Warehouse: It is a type of temporary warehouse which can be built or transferred easily. Generally, it is a fabricated structure or shipping containers used for temporary storage of goods. (Fig. 1.25.)

Fig. 1.25: A Portable Warehouse

Classification on the basis of products handled

(a) Refrigerated Warehouse: It is a temperature-controlled warehouse specifically set up to store perishable items. Generally, processed foods, agricultural commodities, pharmaceutical products and cut flowers are stored in this type of warehouse. (Fig. 1.26)

Fig. 1.26: Refrigerated Warehouse storing Cut Flowers

(b) Bulk Warehouses: These are used to store bulk items, which are generally not packed, such as, wooden logs, scrap, sand, coal, grains, etc. (Fig. 1.27)

Fig. 1.27(a): Bulk Warehouse

Fig. 1.27(b): Bulk Warehouse

(c) Special Commodity Warehouse: These are used to store specialised goods, such as, tobacco, cotton, wool, wheat, etc., which might need temperature and pressure may control depending upon the requirement. (Fig. 1.28)

Fig. 1.28: Specialised Tanks for Storing Natural Gas

(d) General Merchandise Warehouse: Goods which do not require any special storage facilities are stored in these warehouses. For example, tires, rubber mats, etc. It has racks or shelves for stacking items or it can have a big hall for storing goods. (Fig.1.29)

Fig. 1.29: General Merchandise Warehouse

Classification on the basis of operations

(a) Manual Warehouse: This warehouse uses manual handling of goods. Manpower, rather than machines, are used in this warehouse. Thus, the time and cost of operations is high [Fig. 130 (a)].

(b) Mechanised Warehouse: This warehouse uses machines for handling and storage operations. Cranes, forklift, trucks, conveyer belts and mechanical movers are used in place of man power. [Fig.1.30 (b)].

Fig. 1.30(a): Manual Warehouse

Fig. 1.30(b): Mechanised Warehouse

Classification on the basis of location

(a) Production Centered Warehouse: These are positioned near the production facility. These are usually used to store raw materials, spares and intermediate supplies.(Fig. 1.31).

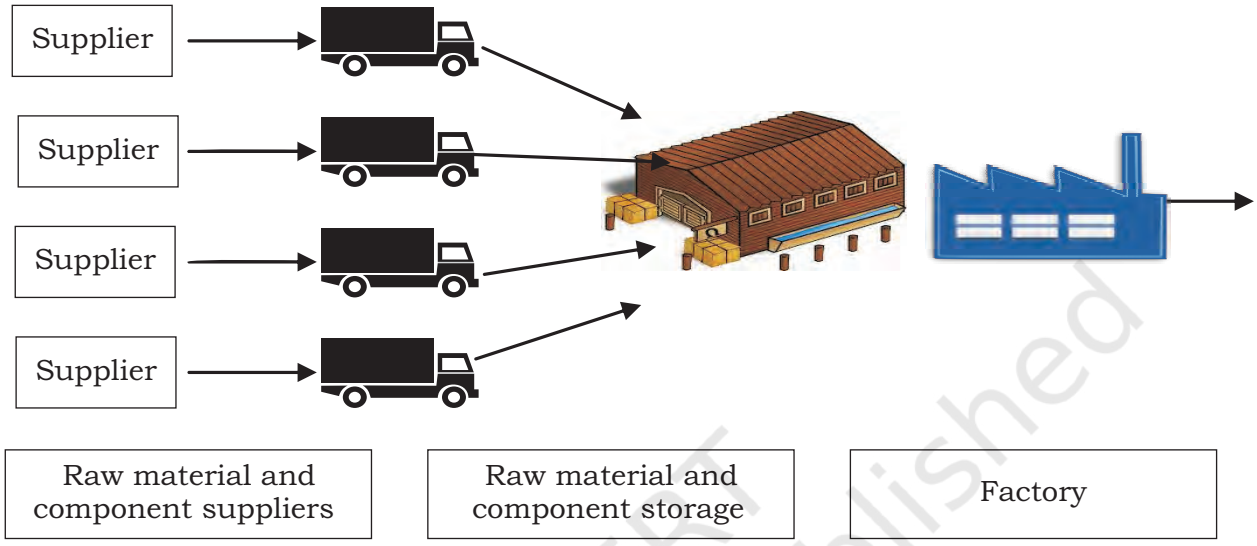


Fig. 1.31: Production centered Warehouse

(b) Market Centered Warehouse: These are located near the market area or distribution centers. These are generally used to store final products and spares for after sales service. (Fig. 1.32).

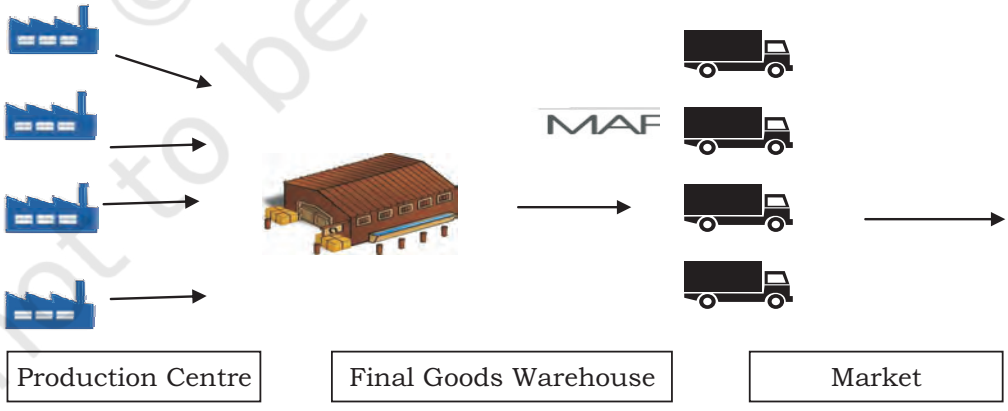


Fig. 1.32: Market centered Warehouse

Warehouse in motion

These warehouses are on wheels. Train wagons, ships or trailers are used as storage points to reduce the time of

transportation to reach the final destination. Sometimes, even processing is done on the way to save time.

Others

Combination Warehouse: This type of warehouse is a pictorial combination of two or more types of warehouses mentioned above. For example, a private, refrigerated, market centered warehouse.

Practical Exercise

Activity 1

Identify the types of warehouses in a given situation.

Material required

Notepad, pen /pencil.

Procedure

1. Consider yourself to be the trader of the products listed in No. 3.
2. Take a group of six students from your class and give them the list of the mentioned products along with a pen and notedpad.
3. Ask them what type of warehouse would you use for the storage of each of the given products? Write the functions of each warehouse.
   (a) Cold drink- _____
   (b) Sand- _____
   (c) Natural gas- _____
   (d) Garments-_____
   (e) Pickles -_____
   (f) Newspaper -_____
4. In the end discuss all the answers in the class.

Activity 2

Classify the goods and their respective warehouses in a given situation.

Material required

Notepad, pen /pencil

Procedure

1. List the type of goods stored in a warehouse.
2. Draw a table containing various types of warehouses.
3. List the goods on the basis of warehouses.
4. Submit the chart to the teacher.

5. Ensure that your work in complete.
6. Discuss with your classmates in front of your teacher.
7. Write the conclusion.

Check Your Progress

A. Fill in the Blanks

1. Food and beverages are stored in _____ warehouses.
2. Warehouses owned by individual companies are known as _____.
3. A private-refrigerated warehouse is a type of _____ warehouse.
4. Market centered warehouses store _____.
5. _____ warehouses use labours whereas _____ warehouses use machines for handling goods.

B. State whether True or False

1. Silo is used for storage of grains.
2. Layout is not important for warehousing.
3. Public warehouse is owned by the government.
4. Space is not a constraint for warehouse.
5. Private warehouses can be hired by any trader.

C. Multiple Choice Questions

1. Warehouse layout _____.
   (a) varies according to the types of operations performed in the warehouse.
   (b) varies according to the type of commodity handled in the warehouse.
   (c) is always the same.
   (d) Both (a) and (b).
2. Objectives of warehouse layout are _____.
   (a) storage
   (b) cubic capacity utilisation
   (c) protection
   (d) Both (b) and (c)
3. Which of the following is not a part of warehousing layout?
   (a) Arrival bay
   (b) Manufacturing bay
   (c) Storage bay
   (d) Shipping/departure bay
   (e) Office

4. Natural gas is stored in _____.
   (a) silo
   (b) specialty warehouse
   (c) bulk warehouse
   (d) refrigerated warehouse
5. Major function of warehouse is _____.
   (a) storage
   (b) protection
   (c) value addition
   (d) All the above

D. Answer in Brief

1. Discuss in brief the classification of warehouses based on the nature of products they store.
2. What is the difference between public, private and leased warehouse?
3. How would you differentiate between market centered and production centered warehouse?
4. What are the characteristics of a good warehouse?
5. Discuss how silo is different from classical warehouse.
6. Special commodities like cut flowers are stored in which type of warehouse and why?

E. Check your Performance

1. Draw a chart showing various categories of warehouse.
2. Demonstrate the various functions of a warehouse.

NOTES

RETAIL - WAREHOUSE BINNER - CLASS 9

UNIT 1 : SUPPLY CHAIN, LOGISTICS AND WAREHOUSING

SESSION 1: INTRODUCTION TO SUPPLY CHAIN

Check Your Progress

A. Fill in the Blanks

1. Supply chain consists of suppliers, manufacturers, distributors, _____ customers.
2. There are two types of logistics; inbound and _____.
3. Warehouse is a part of _____.
4. Decision in regard to inventory and warehousing facilities is a part of _____ decision.
5. Production and distribution schedules are the part of_____ decisions.
6. Flow of information in the supply chain is _____.
7. Logistics is the relation between the _____ and the operating activity of the business.

B. Multiple Choice Questions

1. The purpose of Supply Chain Management is to _____.
   (a) be responsible for customer satisfaction
   (b) increase product quality
   (c) integrate demand and supply
   (d) increase production
2. Logistics is involved with the onward and opposite flow of _____.
   (a) goods
   (b) services
   (c) cash
   (d) All of the above
3. The main decision areas in Supply Chain Management are _____.
   (a) location, production, distribution, inventory
   (b) planning, production, distribution, inventory
   (c) location, production, scheduling, inventory
   (d) location, production, distribution, marketing

C. True or False

1. Supply chains are becoming more complex and dynamic.
2. The information flows from seller to customer and then from customer to supplier.
3. Supply chain supports a company by reducing its inventory cost.
4. Inbound logistics is related to the movement of purchased raw material from suppliers to the company.
5. Outbound logistics is the movement of finished products from manufacturing unit to the final user.

D. Short Answer Questions

1. Define supply chain.
2. Explain various types of supply chain.
3. Discuss the three types of flow related to supply chain.
4. Deliberate the importance of supply chain.

E. Answer in Brief

1. Draw flow charts of material flow and financial flow.
2. Explain the functions of supply chain management with an example.
3. Demonstrate the importance of supply chain with an example.

SESSION 2: CONCEPTS OF LOGISTICS

Check Your Progress

A. Fill in the Blanks

1. _____ is the act of storing goods.
2. Movement of goods from one place to another place is called _____ transportation.
3. Warehouse is an important activity of _____ function.
4. A _____ supply chain is temperature-controlled.
5. A _____ facilitates the stacking and unloading of goods at ships.

6. _____ is carried in an aircraft.
7. _____is a specialised material-handling discipline used for liquid products through a supply chain.

B. Multiple Choice Questions

1. The process of logistics is _____.
   (a) planning
   (b) implementing
   (c) controlling
   (d) All of the above
2. _____is a critical component in the physical distribution of a product.
   (a) Industrial packaging
   (b) Logistical packaging
   (c) A and B both
   (d) A only
3. How many sub-sectors are there in logistics?
   (a) 10
   (b) 20
   (c) 11
   (d) 12
4. A cold chain is a _____ controlled supply chain.
   (a) temperature
   (b) monitor
   (c) environment
   (d) None
5. Air cargo comprises of _____.
   (a) air freight
   (b) air express
   (c) airmail
   (d) All the above

C. State whether True or False

1. A warehouse cannot store goods.
2. Supply chain and logistics are related to each other.
3. The term 'shipping' is used to explain the movement of goods through ships between two points.
4. Marine services are port-related activities.
5. Customs department is authorised by the government for implementing the policies.
6. Air cargo is carried in an aircraft.

D. Answer in Brief

1. What is logistics?
2. Explain briefly about the sub-sectors of logistics.
3. What is the difference between land logistics and liquid logistics?

4. What is a marine service?
5. Draw a flow chart of supply chain process.

E. Check your Performance

1. Draw a flow chart containing the list of subsectors in logistics.
2. Differentiate between warehousing and logistics.

SESSION 3: FUNDAMENTALS OF WAREHOUSING

Check your progress

A. Fill in the Blanks

1. The process of storage is termed as _____ and the place where the goods are stored is called as _____.
2. There are _____ warehouses for specific kind of products.
3. Goods from different suppliers can be received in one warehouse and can be transported as a single bulk consignment to the buyer. This is called_____.
4. The time between receipt of delivery and receipt of order is called _____.
5. Warehousing is an important activity of _____ function.

B. Multiple Choice Questions

1. Storage of goods is as important as_____.
   (a) manufacturing
   (b) marketing
   (c) transportation
   (d) All of the above
2. Warehouse is a planned _____ space for efficient storage.
   (a) commercial
   (b) official
   (c) both (a) and (b)
   (d) None of the above
3. The benefits of warehousing are _____.
   (a) economic
   (b) storage
   (c) service
   (d) All of the above
4. The basic motive of warehousing is to _____.
   (a) store goods
   (b) lose goods
   (c) damage goods
   (d) store goods affected by pesticides

5. Warehousing facility is availed by _____.
   (a) trader
   (b) manufacturer
   (c) importer
   (d) exporter

C. State whether True or False

1. Warehouse provides storage solutions for a large number of clients.
2. Packing is not a function of warehouse.
3. Warehousing is an integral part of logistics.
4. Warehousing works as a part of a system.
5. Effective resource utilisation is not an aim of warehousing.

D. Answer in Brief

1. What is warehousing?
2. Discuss the aims of warehousing.
3. What are the various benefits attached to the warehousing process?
4. Discuss the various principles of warehousing.
5. Write a short note on the needs of warehousing.

E. Check your Performance

1. Draw a chart on the services of warehouse and display in the class.
2. Identify the various components of the warehouse design.
3. Demonstrate the operational steps followed in warehousing.

SESSION 4: FUNCTIONS AND CLASSIFICATION OF WAREHOUSES

Check Your Progress

A. Fill in the Blanks

1. Food and beverages are stored in _____ warehouses.
2. Warehouses owned by individual companies are known as _____.
3. A private-refrigerated warehouse is a type of _____ warehouse.
4. Market centered warehouses store _____.
5. _____ warehouses use labours whereas _____ warehouses use machines for handling goods.

B. State whether True or False

1. Silo is used for storage of grains.
2. Layout is not important for warehousing.
3. Public warehouse is owned by the government.
4. Space is not a constraint for warehouse.
5. Private warehouses can be hired by any trader.

C. Multiple Choice Questions

1. Warehouse layout _____.
   (a) varies according to the types of operations performed in the warehouse.
   (b) varies according to the type of commodity handled in the warehouse.
   (c) is always the same.
   (d) Both (a) and (b).
2. Objectives of warehouse layout are _____.
   (a) storage
   (b) cubic capacity utilisation
   (c) protection
   (d) Both (b) and (c)
3. Which of the following is not a part of warehousing layout?
   (a) Arrival bay
   (b) Manufacturing bay
   (c) Storage bay
   (d) Shipping/departure bay
   (e) Office

4. Natural gas is stored in _____.
   (a) silo
   (b) specialty warehouse
   (c) bulk warehouse
   (d) refrigerated warehouse
5. Major function of warehouse is _____.
   (a) storage
   (b) protection
   (c) value addition
   (d) All the above

D. Answer in Brief

1. Discuss in brief the classification of warehouses based on the nature of products they store.
2. What is the difference between public, private and leased warehouse?
3. How would you differentiate between market centered and production centered warehouse?
4. What are the characteristics of a good warehouse?
5. Discuss how silo is different from classical warehouse.
6. Special commodities like cut flowers are stored in which type of warehouse and why?

E. Check your Performance

1. Draw a chart showing various categories of warehouse.
2. Demonstrate the various functions of a warehouse.

Unit 2

Storage of Goods

A warehouse receives various kinds of inventories. Inventories are bulk of material having economic value stocked for future use. Every company needs stock for smooth running of its activities and holds some stocks to avoid time lag in demand and supply. These stocks have economic value for the producer. Inventory process includes raw material, work-in-process goods, and finished goods.

Different activities are performed in the warehouses by a binner. Some are pre-binning activities while some are post binning activities. As part of pre-binning activities, a binner performs duties like, receiving goods, classifying goods, storage of goods, coding and labeling, etc., in order to store goods at a proper place and condition.

While performing his duties, the binner reports to a supervisor. A report presents information for a specific audience and purpose.

Products are stored in the warehouse in different forms. Some are kept loose and in big quantities, and some in small packs.

This unit is divided into four sessions to provide knowledge and skills on these aspects. The first session deals with goods stored in the warehouse, the second session presents listing and cross checking, the third

session provides instructions reporting to supervisor and the fourth session explains the method of packing of products.

Session 1: Goods Stored in Warehouse

Meaning of goods

Goods are material that satisfy human wants and provide utility.

Classification of goods

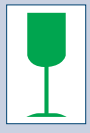
1. Perishable: Perishable goods are those which are damaged quickly when not stored properly and regularly requires some sort of frozen storage. Goods such as food products must be used within a limited time. Figure 2.1 shows perishable food items that must be kept refrigerated for safety. This includes meat, poultry, fish, dairy products, and all cooked leftovers.
2. Non-perishable: These goods can be stored for a long time before being eaten or used. Figure 2.2 shows some non-perishable items like peanut butter and powdered milk.
3. Semi-perishable: These commodities don't require refrigeration but have a limited shelf life. They include items like potatoes, onions, pumpkins and salamis as shown in Figure 2.3.
4. Durable: This is a category of consumer products that does not need to be purchased frequently.
5. Non-durable: Consumers purchase these goods with the plan to use for a short period of time.

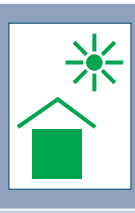
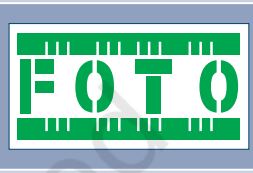
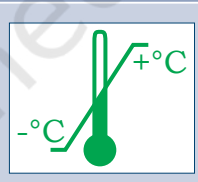
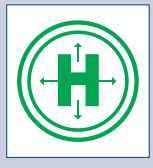
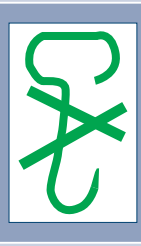
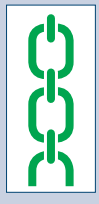
Fig. 2.1: Perishable Goods

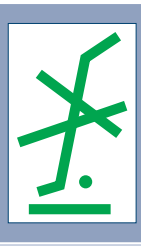
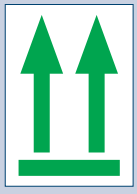
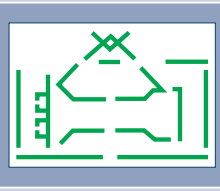
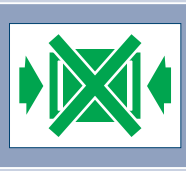
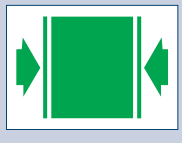
Fig. 2.2: Non-perishable Goods

Fig. 2.3: Semi-perishable Goods

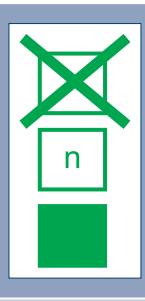
Symbols marked in a warehouse to classify goods

Designation	Symbol
Fragile, handle with care	

Protect from direct sunlight	
Keep dry	
Radiation is dangerous	
Temperature limitations	
Perishable products	
Hermetically sealed	
Use no hooks	
Sling here	

No hand truck here	
Top	
Clamp the cargo only	
Open here	
Protect from radioactive sources	
No rolling	
No clamping here	
Clamp here	

NOTES

Stacking level limitation	
Stacking limitation	
No stacking	
Tropical package	
Centre of gravity	
Do not use forklift truck here	

Practical Exercise

Activity 1

Study the classification of goods (role play).

Material Required

Checklist of places to visit, notes, notebook and pen/pencils.

Procedure

1. Visit a warehouse located nearby.
2. If possible divide the class in three groups and visit three different warehouses.
3. Observe and study practically how the goods are classified based on the following points:
   (a) List the goods that you have seen in the warehouse.
   (b) How are the goods classified in the warehouse? Mention the basics of the goods classifications.
   (c) What are the symbols and the meaning of the symbols you have studied in the warehouse for the safety and describing the nature of the goods?

Check Your Progress

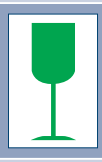
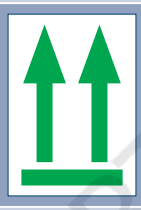
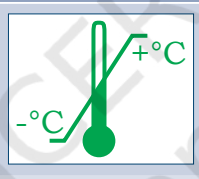
A. Fill in the Blanks

1. _____ are those goods which deteriorate quickly.
2. Potatoes, onions, pumpkins come under _____ commodities.
3. Durables have an extended _____ life.
4. Manufacturing industries use _____ to store raw materials.
5. _____ means they are used in the maintenance, repair or operation of the production process.
6. Retailers who offer online purchasing can fulfill orders directly from _____.
7. Finished goods can be _____ store shelves.
8. Stocks are rotated according to the 'First in First Out, (FIFO) system' or _____ system.
9. _____ symbol should be applied to easily broken cargoes.

B. Match the Columns

Match the symbols marked in a warehouse with their explanation

1		a	Fragile

2		b	Temperature Limitations
3		c	Top
4		d	Keep dry
5		e	Protect from radioactive sources
6		f	Protect from direct sunlight

C. State whether True or False

1. MRO inventory is expanded as maintenance, refill or operation of the production process.
2. Hazardous material must be stored safely, according to the warehouse.
3. Retail Inventory can be sold directly from the warehouse.
4. The recommended temperature chillers is 40°C and below, and that of freezers is -180°C or below .Pets including animals and birds are to be kept within or around the warehouse premises.

D. Answer in Brief

1. Discuss the classification of goods.
2. Discuss the good warehousing practices to be followed by a binner.
3. Explain in detail the symbols of the safety measures to be followed in the warehouse.

E. Check your Performance

1. List out the methods of FIFO, FILO and LIFO.
2. Demonstrate the symbols and their uses at warehouses.

Session 2: Listing and Cross-checking of Inventory

Inventory at warehouse

Inventories are stock of material having economic value for future use. Every company holds some stocks to avoid time lag in demand and supply. These stocks have economic value for the producer. Types of stocks are raw material, work-in-process goods, finished goods inventory.

1. Raw material: collection of various material to make a final good or it is the basic required material, which the company buys to form a new product.
2. Work-in-process goods: These inventories are also called semi-finished goods. At this stage it is converted into the final product.
3. Finished goods inventory: These are the final products obtained after the application of the manufacturing processes.
4. Listing of inventories: A binner receives large number of goods in the warehouse. The items are listed as per their classification, and goods are stored according to it.

Classification of Goods Received in a Warehouse

1. Raw Material: Manufacturing industries use warehouses to store raw material that will eventually be used in production. By housing a supply of raw materials, the manufacturer can easily handle the rise and fall in production based on incoming orders.

2. MRO Inventory: MRO (maintenance, repair or operation) of production process– i.e., consumables such as, material and spare parts. MRO can also be used to mean Maintenance, Repair and Overhaul.
3. Merchandise: Merchandise is also called goods or products.
4. Finished Product: The final production of goods by manufacturers are said to be finished products.
5. Manufacturing: Raw material can be grouped together to manufacture a new product.
6. Hazardous Material: Harmful material are used in some manufacturing operations. These are hazardous in nature.
7. Perishables: Perishable items need a temperature-controlled space or warehouse to store inventory.
8. Retail: It is based on the method used, such as, first in, first out (CIFO), or last in, first out (LIFO). Using an inventory system helps to track how fast the items are sold.

Goods are listed as per their quality, quantity, importance and priority, etc. (Fig. 2.4).

Inventory List

(Personal or Company Name)		Date.....		Other				
Inventory ID	**Name**	**Description**	**Unit Price**	**Quantity in Stock**	**Reorder Level**	**Reorder Time**	**Quantity in reorder**	**Discontinued**

Fig. 2.4: Inventory List

1. Inventory checking: Verifying the stored goods of warehouse.

   Methods of counting inventory: Goods received in warehouse can be counted by the follwoing methods:

   - By searching for an item name or SKU (stock keeping unit).
   - By scanning barcode.
   - By finding the item in the list.

2. Cross-checking: Verifying the items by counting or using any alternative method.

Description	Yes	No	Remarks
On inventory levels			
On information policies			
Inventory monitoring			

Fig. 2.5: Cross-checking List

Practical Exercise

Activity 1

Visit a warehouse to understand the binner and its binning activities with inventory.

Material Required

Note book, pen/pencil, check list

Procedure

1. Go to the warehouse along-with your peers.
2. Meet the binner and others and greet them.
3. Take a round of the warehouse and enquire the binner about the following:
   - Goods received for storage.
   - Storage for those products.
   - Local distributors of these products and their locations.
4. Discuss with the binner about checking of inbound inventory.

5. Make note of your queries.
6. Show your notes to the executive and confirm.
7. Prepare a report and discuss with friends and show it to the teacher.
8. Discuss your report in the class.

Activity 2

Prepare a stepwise report on binning activities on the basis of your previous visit to the warehouse.

Material Required

Note book, pen/pencil.

Procedure

1. On the basis of Activity 1 prepare a report of warehouse checklist for agricultural commodities received for storage.
2. Discuss the report in the class.
3. Submit the report to your teacher.

Check Your Progress

A. Fill in the Blanks

1. _____are stock of materials having economic value for future use.
2. Goods, which are lying on the production floor for partial processing are called _____.
3. _____is also called goods or products.
4. _____ is a large investment of a business capital.
5. _____ can be sold directly from the warehouse.

B. Match the Columns

	Column A		Column B
1.	MRO	a.	Work in process
2.	In transit inventory	b.	Fruits and vegetables.
3.	Assembly line of automobile	c.	Maintenance, repairs and operating inventories
4.	Perishable material	d.	Corrosive materials and toxic material.
5.	Hazardous material	e.	Pipeline inventory
6.	Cooking oil	f.	Inventory at a fixed location
7.	Location inventory	g.	Raw material
8.	Crude oil	h.	Finished goods

C. State whether True or False

1. Perishable goods are those which deteriorate quickly when not stored properly.
2. Retail inventory is the finished raw inventory that are bought to resell at a profit.
3. MRO inventory is used in the maintenance, repair or operation of the production process.
4. Cross checking is verifying the items by counting or any other alternative method.
5. Physical verification of inventory is a reliable and a quick method of inventory checking.

D. Answer in Brief

1. What is the concept of inventory?
2. What is a checklist?
3. Explain the components of a checklist.
4. What are the methods of cross-checking?
5. Describe different types of inventories.

E. Check your Performance

1. Demonstrate the various methods of cross-checking.
2. Identify different types of inventories.

SESSION 3: REPORTING TO SUPERVISOR

Report

A report is a document that gives information in a systematised format for a specific audience and purpose. Summaries of the reports may be in oral or written form.

Types of reports include memos, minutes, lab reports, book reports, policies and procedures.

In a warehouse, the binner performs different activities. In pre-binning activities, the binner performs duties like receiving, classifying, storage, coding and labeling of goods, etc., to store them at a proper place and condition.

Importance of report

The importance of writing a report are—

1. Systematic presentation of facts
2. Prepared in writing

3. Comprehensive document
4. Provides data and guidance
5. Self-explanatory document

Thus, reports perform the important management functions of control, communication, feedback, analysis and persuasion.

Contents of a report

A report may have the following—

- An Abstract
- Introduction
- Details or description of situations or events about which the report is made.
- Observations and inferences of the report maker and carefully referenced views of others.
- An evaluation of the facts or the results of the above.

Many organisations use standard guidelines or structures for making various reports.

While performing the duties at a warehouse, the binner does different types of reporting to the supervisor. These reports are —

1. Daily Report: It is a document that contains details of day-to-day activities. In a warehouse, the binner reports to the supervisor about the entire day's activities in a given format or as per the organisation policies.
2. Working of Machines: The binner performs the duties with the help of several types of machines and equipment. Cases of non-functioning and working problems must be reported to the supervisor.

Techniques of reporting

The different techniques used by the warehouse binner to report to the supervisor are —

(i) Oral: This is the simplest and fastest technique of reporting. In this technique, communication takes place between two people. This is in the form of questions and response. The warehouse binner

responds to the supervisor through oral reporting and clarifies queries, if any. Authenticity of oral report is least among other forms of reporting.

(ii) Written: Written report is the most reliable and authentic report. This is used for future reference also. It is done in both specific and designed format.

(a) Specific format: When information is sought in a specific manner then this format is used. There is a pre-defined format for this kind of reporting.

(b) Designed format: When report is prepared as per requirement of information then this format is used. This is suitable when occasional information is sought.

(iii) Online Report: Due to intensive use of technology, most of the reports are demanded and submitted online by parties. In a warehouse, online report is common due to several reasons. This technique requires a computer with internet facility and other a devices.

Equipment used at warehouse

Some equipment are essential for warehouse operation regardless of space and function. Here are the list of the equipment used in a warehouse:

1. Lift Equipment: In a warehouse lift equipment makes day-to-day task easy and efficient. Types of lift equipment include hand trucks, forklifts and pallet jacks. All are used for moving stocks easily with limited risk and product damage (Figs.2.6(a) and 2.6(b)).

Fig. 2.6(a): Lift Equipment

Fig. 2.6(b): Lift Equipment

2. Storage Equipment: Different items need different kinds of storage For example, for agricultural products and industrial goods, the equipment for storage needs varies as per their characteristics.

Fig. 2.7: Storage Equipment

Fig. 2.8: Weighing Scale

Fig. 2.9: Packaging Equipment

Warehouses use different storage systems like racks or industrial shelves to organise inventory for a smoother process (Fig. 2.7).

3. Scales: Scales are important for almost all businesses. Scales are designed to weigh over-sized items containing products like pallets, boxes, and barrels, etc. Warehouses use scales for shipping and receiving, bulk loading, and counting inventory. Scales help to estimate shipping costs and in managing transport trucks (Fig.2.8).
4. Packaging Equipment: Packaging is done for preparing and protecting goods. In a warehouse, packaging equipment helps in proper packaging of goods. It helps to reduce damage of goods and chances of accidents. The packaging equipment case sealer helps to tape boxes faster, while the stretch wrap machines helps to quickly prepare large of products for shipment (Fig. 2.9).
5. Bins and Containers: Warehouses need storage equipment to store and organise material. Bins and containers help in placing items into the appropriate inventory for easy storage and shipping.
6. Dock Equipment: It accelerates the movement of material from one place to another. Loading dock equipment improves efficiency and safety in a warehouse. Use of forklifts and pallet jacks, can ease the process of loading and unloading of goods on tractor trailers, etc. Dock boards and plates give solution to join the gaps.
7. Maintenance of Equipment: The work done in a warehouse requires several types of equipment. The binner reports to the supervisor in case of any damace, repair or requirement of new equipment arises.
8. Query Report: The warehouse receives different types of queries related to warehouse space, charges, terms and conditions, etc. The binner intimates the supervisor about these queries.

9. Discrepancies: The warehouse receives different consignments from different parties. These consignments remain in different forms such as raw material, semi-finished goods, or finished products. In some instances, a party's claim differs from the actual goods received. Such instances should be reported to the supervisor on time to avoid any discrepancies.
10. Opportunities and suggestions: Since the binner is familiar with the merits and deficiencies in the warehouse, he informs the supervisor about opportunities and suggestions regarding the warehouse.

Practical Exercise

Activity 1

Visit a warehouse to understand the reporting activities of goods done by binner.

Material Required

Note Book, Pen/Pencil, Check list.

Procedure

1. Reach the warehouse along with your peers.
2. Meet and greet the inventory executives and others.
3. Take a round trip of the warehouse and enquire the binner about the following:
   - Suppliers of various products and their locations.
   - Storage for those products.
   - Local distributors of these products and their locations.
   - Potential customers.
   - Transportation for those products.
4. Discuss with the executive(s) about reporting practices.
5. Show your notes to the executive(s) and confirm.
6. Prepare a report and discuss with friends and show it to your teacher.
7. Discuss your report in the class.

Activity 2

Prepare a report for warehouse manager.

Material Required

Note Book, Pen/Pencil

Procedure

1. On the basis of Activity 1 prepare a report for warehouse manager covering following aspects:
   (i) Equipment condition
   (ii) Storage condition and labeling of goods
   (iii) Availability of storage space
2. Submit the report to your teacher

Check Your Progress

A. Fill in the Blanks

1. Hand trucks, forklifts and pallet jacks are _____ equipment.
2. A report is a _____which gives information to specific audience and purpose.
3. A report serves as a _____relating to certain business matter.
4. Document which contains details of day to day activity is known as _____.
5. _____equipment expedite the transfer of materials from one place to another.

B. Match the Columns

	Column A		Column B
1.	Report	(a)	Forklifts
2.	Lift equipment	(b)	Reduce damage
3.	Daily report	(c)	Document contain details of day to day activity
4.	Oral Report	(d)	Document that presents information in an organised format
5.	Packaging	(e)	Report in spoken form

C. State whether True or False

1. Lift equipment make everyday tasks such as transporting items easy and efficient.
2. Scales are important equipment for almost every kind of business.
3. Packaging is preparing and protecting goods for transport, warehousing, logistics, sale, and end use.
4. Warehouses need storage equipment to store and organise materials.
5. Bins and containers allow for easy storage and shipping.

6. Binner is the person who moves about in the warehouse and is familiar with several merits and deficiencies in warehouse.

D. Answer in Brief

1. What is a report?
2. Explain the importance of a report.
3. Describe the equipments used in warehouse.
4. What are the different techniques of reporting?

E. Answer the Following

1. Demonstrate the importance of reporting.
2. List out the contents of reporting.
3. Identify the equipment used in a warehouse.
4. Spell out the different techniques used by a warehouse binner while submitting a report to the supervisor.

SESSION 4: PACKAGING OF PRODUCTS

We prefer to purchase packed items or an item with nice packaging. The attractive packaging can facilitate the customer to purchase that product.

Meaning of packaging

Packaging is a harmonised system of preserving goods from various disturbances.

Purpose of packaging

1. Physical protection — The package may require protection from, transport, warehousing, etc.
2. Barrier protection — Some packages contain oxygen absorbers to help extend shelf life.
3. Containment — Minor objects are assembled together in one package for proper storage and selling efficiency.
4. Advertising — Encouraging buyers to purchase a product with attractive ads.
5. Security — Packaging helps to secure the product by reducing the risks of shipment.

6. Convenience — Convenient packaging helps to understand the package from the signs and symbols placed on it.

Types of packaging

The various types of packaging are—

1. Transport or distribution package
2. Consumer package
3. Medical device packaging
4. Bulk chemical packaging
5. Drug packaging
6. Food packaging
7. Military packaging
8. Pharmaceutical packaging, etc.

There are three levels of packaging, such as, primary, secondary and tertiary, which detailed below:

Primary packaging: The packaging that most closely touches a product is often referred to as retail packaging. Its main objectives are to protect the product and inform or attract a customer. For instance, a soap packed with the cover, which contains the product information like product features, ingredients used, manufacturing date, expiry date, etc., is called primary level of packaging.

Secondary packaging: The wrapping used to transport products previously placed in primary packaging. Its foremost goals are to safeguard products and provide labelling during transportation of products. It's also used by way of display pack in retail sites, such as, grocery retail stores. Samples of secondary packaging comprise 12 soaps put in one plastic cover for safe transit.

Tertiary or transit packaging: The packaging used mostly by warehouses before shipping the products of secondary packaging. Its main objective is to appropriately protect consignments during their period in transit. Consumers typically do not see tertiary packaging. Examples are the pallets that majority shipments are retained on, corrugated cushions used to distinct layers of boxes and stretch wrap used to protect stacks of cartons.

Labeling symbols of packages

The symbols used to label packages are (Fig. 2.10)—

Explosives | *Flammable Liquid* | *This way Up* | *Fragile* | *Keep away from Water*

Fig. 2.10: Symbols of Package Labeling

Practical Exercise

Activity 1

Study the packaging at a warehouse.

Material Required

Checklist to visit notes, notebook and pen/pencils.

Procedure

1. Visit a warehouse and see the types of packing and symbols used.
2. Mention the appropriate option (Yes, No and give reasons/ remarks)

S. No.	Activity and Functions	Yes	No	Reasons/ Remarks
1.	Did you understand the purposes of packing?			
2.	Are you able to identify types of packing?			
3.	Are you able to identify the symbols used for packing?			

Check Your Progress

A. Fill in the Blanks

1. _____ is the enclosing of technology.
2. _____ holds to envelop the product.
3. _____ is outside the primary packaging, and may be used to prevent pilferage or to group primary packages together.
4. Tertiary or _____ packaging is used for bulk handling.
5. _____ is an important function to ensure goods are stored safely.

B. Multiple Choice Questions

1. Allotting a number to each item is called _____.
   (a) labeling
   (b) coding
   (c) tracking
   (d) packaging
2. Packaging outside the primary packaging is called _____ packaging.
   (a) semi primary
   (b) secondary
   (c) tertiary
   (d) transit
3. The purpose of packaging is _____.
   (a) physical protection
   (b) barrier protection
   (c) information transmission
   (d) All of these
4. Packaging is a part of _____.
   (a) technology
   (b) goods
   (c) warehousing
   (d) None
5. A "green dot" may indicate _____.
   (a) vegetarian packaging
   (b) non-vegetarian packaging
   (c) flammable
   (d) danger

C. State whether True or False

1. Packaging is the technology of shielding products.
2. Packages and labels fail to communicate the uses of product.

3. Tertiary packaging is the material that first envelops the product.
4. Packaging is very important to keep the goods safe.
5. Packaging can be done in a warehouse also.
6. Multiple packaging is required for every product.

E. Short Answer Questions

1. Explain the purpose and the types of packing.
2. Which symbols are used in the warehouse and what are their meanings?
3. What are the advantages of codification and colour codes?

F. Check your Performance

1. Demonstrate the packing mechanism in the warehouse.
2. Spell out the advantages of warehouse packaging.
3. List the purpose of packaging and package labels.
4. Demonstrate the packaging types.

RETAIL - WAREHOUSE BINNER - CLASS 9

UNIT 2 : STORAGE OF GOODS

SESSION 1: GOODS STORED IN WAREHOUSE

Check Your Progress

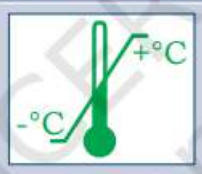
A. Fill in the Blanks

1. _____ are those goods which deteriorate quickly.
2. Potatoes, onions, pumpkins come under _____ commodities.
3. Durables have an extended _____ life.
4. Manufacturing industries use _____ to store raw materials.
5. _____ means they are used in the maintenance, repair or operation of the production process.
6. Retailers who offer online purchasing can fulfill orders directly from _____.
7. Finished goods can be _____ store shelves.
8. Stocks are rotated according to the 'First in First Out, (FIFO) system' or _____ system.
9. _____ symbol should be applied to easily broken cargoes.

B. Match the Columns

Match the symbols marked in a warehouse with their explanation

1		a	Fragile

2		b	Temperature Limitations
3		c	Top
4		d	Keep dry
5		e	Protect from radioactive sources
6		f	Protect from direct sunlight

C. State whether True or False

1. MRO inventory is expanded as maintenance, refill or operation of the production process.
2. Hazardous material must be stored safely, according to the warehouse.
3. Retail Inventory can be sold directly from the warehouse.
4. The recommended temperature chillers is 40°C and below, and that of freezers is -180°C or below .Pets including animals and birds are to be kept within or around the warehouse premises.

D. Answer in Brief

1. Discuss the classification of goods.
2. Discuss the good warehousing practices to be followed by a binner.
3. Explain in detail the symbols of the safety measures to be followed in the warehouse.

E. Check your Performance

1. List out the methods of FIFO, FILO and LIFO.
2. Demonstrate the symbols and their uses at warehouses.

SESSION 2: LISTING AND CROSS-CHECKING OF INVENTORY

Check Your Progress

A. Fill in the Blanks

1. _____are stock of materials having economic value for future use.
2. Goods, which are lying on the production floor for partial processing are called _____.
3. _____is also called goods or products.
4. _____ is a large investment of a business capital.
5. _____ can be sold directly from the warehouse.

B. Match the Columns

	Column A		Column B
1.	MRO	a.	Work in process
2.	In transit inventory	b.	Fruits and vegetables.
3.	Assembly line of automobile	c.	Maintenance, repairs and operating inventories
4.	Perishable material	d.	Corrosive materials and toxic material.
5.	Hazardous material	e.	Pipeline inventory
6.	Cooking oil	f.	Inventory at a fixed location
7.	Location inventory	g.	Raw material
8.	Crude oil	h.	Finished goods

C. State whether True or False

1. Perishable goods are those which deteriorate quickly when not stored properly.
2. Retail inventory is the finished raw inventory that are bought to resell at a profit.
3. MRO inventory is used in the maintenance, repair or operation of the production process.
4. Cross checking is verifying the items by counting or any other alternative method.
5. Physical verification of inventory is a reliable and a quick method of inventory checking.

D. Answer in Brief

1. What is the concept of inventory?
2. What is a checklist?
3. Explain the components of a checklist.
4. What are the methods of cross-checking?
5. Describe different types of inventories.

E. Check your Performance

1. Demonstrate the various methods of cross-checking.
2. Identify different types of inventories.

SESSION 3: REPORTING TO SUPERVISOR

Check Your Progress

A. Fill in the Blanks

1. Hand trucks, forklifts and pallet jacks are _____ equipment.
2. A report is a _____which gives information to specific audience and purpose.
3. A report serves as a _____relating to certain business matter.
4. Document which contains details of day to day activity is known as _____.
5. _____equipment expedite the transfer of materials from one place to another.

B. Match the Columns

	Column A		Column B
1.	Report	(a)	Forklifts
2.	Lift equipment	(b)	Reduce damage
3.	Daily report	(c)	Document contain details of day to day activity
4.	Oral Report	(d)	Document that presents information in an organised format
5.	Packaging	(e)	Report in spoken form

C. State whether True or False

1. Lift equipment make everyday tasks such as transporting items easy and efficient.
2. Scales are important equipment for almost every kind of business.
3. Packaging is preparing and protecting goods for transport, warehousing, logistics, sale, and end use.
4. Warehouses need storage equipment to store and organise materials.
5. Bins and containers allow for easy storage and shipping.
6. Binner is the person who moves about in the warehouse and is familiar with several merits and deficiencies in warehouse.

D. Answer in Brief

1. What is a report?
2. Explain the importance of a report.
3. Describe the equipments used in warehouse.
4. What are the different techniques of reporting?

E. Answer the Following

1. Demonstrate the importance of reporting.
2. List out the contents of reporting.
3. Identify the equipment used in a warehouse.
4. Spell out the different techniques used by a warehouse binner while submitting a report to the supervisor.

SESSION 4: PACKAGING OF PRODUCTS

Check Your Progress

A. Fill in the Blanks

1. _____ is the enclosing of technology.
2. _____ holds to envelop the product.
3. _____ is outside the primary packaging, and may be used to prevent pilferage or to group primary packages together.
4. Tertiary or _____ packaging is used for bulk handling.
5. _____ is an important function to ensure goods are stored safely.

B. Multiple Choice Questions

1. Allotting a number to each item is called _____.
   (a) labeling
   (b) coding
   (c) tracking
   (d) packaging
2. Packaging outside the primary packaging is called _____ packaging.
   (a) semi primary
   (b) secondary
   (c) tertiary
   (d) transit
3. The purpose of packaging is _____.
   (a) physical protection
   (b) barrier protection
   (c) information transmission
   (d) All of these
4. Packaging is a part of _____.
   (a) technology
   (b) goods
   (c) warehousing
   (d) None
5. A "green dot" may indicate _____.
   (a) vegetarian packaging
   (b) non-vegetarian packaging
   (c) flammable
   (d) danger

C. State whether True or False

1. Packaging is the technology of shielding products.
2. Packages and labels fail to communicate the uses of product.

3. Tertiary packaging is the material that first envelops the product.
4. Packaging is very important to keep the goods safe.
5. Packaging can be done in a warehouse also.
6. Multiple packaging is required for every product.

E. Short Answer Questions

1. Explain the purpose and the types of packing.
2. Which symbols are used in the warehouse and what are their meanings?
3. What are the advantages of codification and colour codes?

F. Check your Performance

1. Demonstrate the packing mechanism in the warehouse.
2. Spell out the advantages of warehouse packaging.
3. List the purpose of packaging and package labels.
4. Demonstrate the packaging types.

Unit 3

Bin Management

Warehouses are part of supply chain management. Storage system is an engineered system with the function to store materials.

This unit is divided into four sessions to provide knowledge on binning and bin management. The first session focusses on binning and material required; the second session discusses the storage system under binning; the third session deals with labelling and coding of goods and the fourth session describes the warehouse management system.

Session 1: Binning and Material Required

Bins

Bins are large containers or enclosed space for storing something in bulk, such as coal, grain, or wool. These bins are also used in various ways as;

1. Bread bin: A small container for bread.
2. Brewing bin: A storage place for bottled items, i.e., one particular bottling of syrup.
3. Dustbin or rubbish bin: A container for litter, rubbish, etc.

Binning

Storing the goods in a systematic manner into the bins that are available in the warehouse is binning. Space

saving can be achieved by this process. The storage of the goods could vary on the basis of requirement and the type of goods. Many a times the storage bins are available immediately for the regular goods but at times the storage place and bins have to be allocated and designed for the goods that are rarely produced.

Binner

Binner is an individual whose role is to bin or store the items into the storage bins according to an inventory list. Binner is also called as floor staff and warehouse associate.

The binner is responsible for moving cargo, re-packing, labelling and coding the items with the help of the supporting team members as per the instructions received from the supervisor.

Key competencies of a binner include—

1. Knowledge of the types of goods and products being handled.
2. Binning and stock recording methods.
3. Working knowledge of technology and equipment used for scanning products and binning goods.
4. Understanding the methods, sequence and material for cleaning a variety of surfaces, equipment and machinery.
5. Identifying suitable equipment for the work area.
6. Acquiring in-depth knowledge of the procedures for disposing waste, disposing of storing equipment, reporting unidentified soiling, etc.

Steps in binning process

There are six-steps in the binning process. They are—

(a) Classifying the inventory: The inventory is classified according to the size, weight and frequency of the stored goods.

(b) Allocating the right storage solutions to the inventory: Steps to be followed by a binner, to organise the storage of inventory which helps them to know the location of the goods stored.

(c) Automating processes: The goods can be stored and retrieved more quickly with greater accuracy.

(d) Identifying storage location for goods to help in—
- retrieval
- picking accuracy
- work processes
- search of items

(e) Optimising picking processes: Parallel picking is the mixture of both strategies outlined.

(f) Implementing a comprehensive software solution: The company's Enterprise Resource Planning (ERP) systems must be merged with the programs for controlling the storage in the warehouse and for finely tuning the picking process.

This binning process is very much successful and productive in warehouse management.

Functions of a binner

The functions of a binner are very important in a warehouse. They are—

1. Receiving all packages and checking them for errors and pre-packing packages before storing into the bins according to an inventory list.
2. Preparing and performing binning, post binning exercises and carrying out housekeeping and post housekeeping activities.
3. Locating bay area and binning products from the pick list and storing them on shelves.
4. Classifying the goods received as per the defined categories.
5. Notifying the supervisor if the current location is full and obtaining an alternate location.
6. Checking the nature of products and determining method of binning.
7. Collecting the pallet trolley if required or requesting assistance of available MHE operator.
8. Applying the binning methods specified by the organisational procedure for the type of goods and sizes of orders using equipment required and covering all items on pick list.

9. Ensuring that the methods of packing, labeling and coding for all category of goods are followed.
10. Checking binned items for errors and reporting the status of binned inventory to the supervisor complying with the safety, security and maintenance regulations.

Practical Exercise

Activity 1

Understanding the binning process.

Material Required

Check-list to visit notes, notebook and pen/pencils.

Procedure

1. Visit a warehouse near your location.
2. Take a note of their activities, functions and keenly observe the premises.
3. Mention the appropriate option (Yes, No and give reasons/ remarks).

S.No.	Activity and Functions	Yes	No	Reasons/ Remarks
1.	Looking at the records, are the goods received regularly at the warehouse?			
2.	Do they maintain format for the inward or outward of goods?			
3.	Is the procedure of inward or outward clear with all the needed information?			
4.	Is the location of the storage clean and tidy?			
5.	Is the staff responsible at storage bins?			
6.	Did you observe any untidyness in the warehouse?			
7.	Are the storage bins made as per the inventory list?			
8.	Is the inventory data recorded and maintained systematically?			
9.	Is there any professional development training given to the staff if needed?			
10.	Is the work done at binner level properly recorded at managerial level?			
11.	Is there any efficiency report maintained in use of materials and labour?			

4. Survey Questions: With prior permission from the warehouse head, visit the warehouse and practically involve the students in end-to-end binning process with the support and guidance by the warehouse staff.

Give responses to the points in the space provided.

(a) Prior information of the goods about to be received at the warehouse.

_____
_____
_____

(b) Process the filling of needed inward documents and forwarding the same to the next level.

_____
_____
_____

(c) Counting the goods received and measures to be taken undertaking the goods details.

_____
_____
_____

(d) Carrying the goods to the storage bins.

_____
_____
_____

(e) Consulting the person who is responsible for storage allocation if the stores or shelves are fully loaded.

_____
_____
_____

(f) Packing, labelling and coding differences, and colours, signs and symbols involved in the binning process while moving goods.

_____
_____
_____

(g) Taking the trolleys with bulky goods within the warehouse.

_____
_____
_____

(h) Safety measures, disposal of waste methods, etc.

_____
_____
_____

(i) Outward process of the goods to be sent to customers.

_____
_____
_____

(j) Cleaning the storage location on daily basis, and measures to be taken for the same.

_____

_____

_____

Activity 2

Demonstrate the key competencies of a binner in a given situation.

Material Required

Check-list to visit notes, notebook and pen/pencils.

Procedure

1. List the key competencies of warehousing in a paper.
2. Find the key competencies of a binner.
3. Discuss about it in the class.
4. Ask the teacher to comment on your discussions.

Check Your Progress

A. Fill in the Blanks

1. Binner is the individual whose role is to _____ in to the storage bins, according to an inventory list.
2. Binner at times is responsible for moving cargo, repacking and _____ the items.
3. The key features to consider in classifying the inventory are the _____ and _____ of the stored goods.
4. Larger quantities of goods can be _____ and _____ more quickly.
5. To move cargo, _____ items and documenting cargo with the products shipping for distribution.

B. Multiple Choice Questions

1. Which are the key competencies of a warehouse binner?
   (a) Knowledge of the types of products and goods being handled.
   (b) Understanding the methods, sequence and material.
   (c) In-depth knowledge of the procedures.
   (d) All of these.
2. Allocating right storage solutions to the inventory means _____.
   (a) putting similar products in the same place
   (b) contacting the right company for storage

(c) unloading the products properly
(d) None of these

3. Automating processes result in _____.
   (a) higher picking accuracy of up to 99.9 per cent
   (b) better monitoring
   (c) better inventory
   (d) All of these
4. Picking method of dividing the storage area into various sections is known as _____.
   (a) batch picking
   (b) zone picking
   (c) parallel picking
   (d) None of these
5. Finding the optimal position for each individual product within the warehouse is the _____.
   (a) Retrieval frequency
   (b) Number of recover units in each case
   (c) Number of units to be stored
   (d) All of the above

C. State whether True or False

1. Bread is kept in a dust or rubbish bin.
2. The storage of the goods could vary based on the requirement and type of goods.
3. A warehouse clerk is an individual whose role is to bin or store the items into the storage bins.
4. Binners should have understanding of methods, sequence and material for cleaning variety of surfaces, equipment and machinery.
5. It is not necessary to put similar items at the same place.

D. Match the Columns

1	Binner	a	Working knowledge of technology and equipment used for scanning products and binning goods.
2	Competencies of a binner	b	Sticker all product with an information label.
3	Track and store	c	Higher picking accuracy of up to 99.9%.
4	Automating processes	d	To bin or store the items into the storage bins according to an inventory list.

E. Answer in Brief

1. How are the goods received at a warehouse classified?

2. Explain the importance of binning process at a warehouse.
3. Describe the functions of a binner.

F. Check your Performance

1. Demonstrate your observations and provide suggestions from the practical session of your visit to the warehouse.
2. Spell out procedures followed in the warehouse while performing inward and outward activity of goods.
3. Demonstrate the competencies that each student possesses after the practical session.

Session 2: Storage System under Binning

Fig. 3.1: Warehouse

Warehouses are part of supply chain management. Storage system is an engineered system with the function to store materials, in other words to hold materials until they are needed (Fig. 3.1).

Storage

An effective planning is required for placing and locating goods in a warehouse. Warehouse stores a large quantity of goods horizontally and vertically, therefore placing goods is not an easy task. Making a plan for placing of goods in a warehouse needs specification, classification, segmentation and labelling of place for the goods.

Storage is a place with a big area and covered rooftop to store goods of different classes in bulk quantity for a certain period of time. The layout design of the store is made in a way to ensure keeping, receiving, movement and removing of goods in a convenient and safe manner.

Classification of goods for storage

The classification of goods for storage in a warehouse depends on the following factors—

(a) FMCG: Food category, non-food category, like bread, biscuits, chips, detergents, soaps, hair

oil, shampoo, etc., are known as Fast Morning Consumer Goods (FMCG).

(b) Consumer goods: Stationeries.

(c) Semi durable goods: Mobiles, bags, belts, shoes, bulbs, tube lights, etc.

(d) Durable goods: Washing machine, television, furniture, etc.

(e) Industrial goods: Conductors, generators, machines, inverters, weighing machines.

Further placing of goods for storage within the above categories is done on the following basis—

1. Perishable
2. Non-perishable
3. Identifying damaged goods at every stage
4. Proper handling of goods with care in terms of reserve place, maintaining temperature for certain goods
5. Weight and size
6. Storing time
7. Receiving (incoming)
8. Issuing (outgoing)
9. Safety and security
10. Quality check before receiving, before issuing and during storage

There are four kinds of warehouse storage—

1. Shelving: Shelves are also known as racks, which are assembled with typical methods.
2. Mobile Shelving: Storage units are designed to show capacity over traditional storage units.
3. Pallet Racking: In this the storage of palletised material are arranged in horizontal rows with multiple levels (Figure 3.2).
4. Multi-tier Racking: The ideal storage, picking and packing of large number of components with limited staff.

Fig. 3.2: Pallet Racking

Practical Exercise

Activity 1

Visit a warehouse to understand the storage system.

Material Required

Notebook, Pen Pencil, and Camera.

Procedure

1. Make a group of 4–5 students.
2. Ask them to visit a warehouse nearby their home or school.
3. Ask a warehouse binner to show the type of storage system in the warehouse.
4. Also ask about the use of different types of storage system.
5. Make a report on the visit and submit it to the subject teacher.
6. Present the report in the class and discuss the outcome of the visit.

Activity 2

Prepare a chart on your visit to the warehouse

Material Required

Notebook, Pen, Pencil, Eraser, Drawing sheet, Sketches.

Procedure

1. As Activity 1 discussed above.
2. Ask them to draw a chart about the different storage systems in the warehouse.
3. Display the chart in the class and discuss the outcome of the visit.

Check Your Progress

A. Fill in the Blanks

1. Categorised storage of goods is a function of _____.
2. _____ means the goods which are coming into the warehouse for storage for a certain period of time.
3. The place where the goods are stored is called _____.
4. Full form of FMCG is _____.
5. Furniture is an example of _____ good.

B. Multiple Choice Questions

1. Warehousing provides time and place utility for _____.
   (a) raw material
   (b) industrial goods
   (c) finished products
   (d) All of the above
2. Functions of warehousing include _____.
   (a) transportation consolidation
   (b) docking
   (c) service
   (d) All of the above
3. Among the following, industrial goods are _____.
   (a) conductor and generator
   (b) machines, inverter and weighing machines.
   (c) (a) and (b) both
   (d) None
4. Shelving is the fundamental tool in _____.
   (a) handling material
   (b) racking
   (c) (a) and (b) both
   (d) None
5. Multi-tier storage is the solution for
   (a) storage
   (b) picking
   (c) packing
   (d) All of the above

C. State whether True or False

1. The goods which are coming into the warehouse for storage are known as outbound goods.
2. Proper planning of classification and specification of goods is not essential before storing in warehouses.
3. It is not possible to segment goods on the basis of same destination in a warehouse.
4. Bread, biscuit and chips are the examples of durable goods.
5. Multi-tier storage is the ideal storage solution.

D. Answer in Brief

1. Describe the classification of goods for storage.
2. Explain segmenting the goods on the basis of same destination.
3. What is shelve storage?
4. What is mobile shelving?

5. What do you understand by FMCG goods?
6. What do you understand by pallet racking?

E. Check your Performance

1. Classify the goods on the basis of storage.
2. Show how to put items in shelve storage.
3. Demonstrate different kinds of warehouse storage.

SESSION 3: LABELING AND CODING OF GOODS

Labeling

Warehouse labels are important for inventory management.

Proper organisation of the warehouse not only helps to identify products, but at the same time makes the shipping easy. A simple yet effective way to achieve this is to utilise warehouse labels.

Product manufacturers utilise warehouses to store a wide variety of raw material, semi processed or finished goods.

Commonly used warehouse labels

Several kinds of warehouse labels exist in warehouse management. Some of the general types are briefly described below.

- **Floor labels**: These are appropriate for big warehouses with numerous rooms. Floor labels are produced to withstand heavyweight traffic and attire and tear. In addition, they are roughly produced to withstand harsh solvents, oil, hydrocarbon solutions, and some other contaminants. Floor labels can be custom factory-made in any shape, size and length and then can be easily incorporated with variable graphics, logos, texts, bar codes, and colours.
- **Rack labels:** These are the utmost common types mostly utilised in warehouse services to restructure the workflow. These labels help identify the right products for storing, shipping,

and inventory management. There are several kinds of rack labels existing, including cold storage, magnetic and multi-level rack labels.

- **Aisle labels:** These labels are planned to pinpoint the location of a merchandise location quickly and to provide directions, cautions, or welfare messages. These are accessible in several colours including green, red, white and yellow, which ensure high prominence. Each colour is intended to convey precise information. For instance, white aisle labels are essentially chosen to recognise the location of shelves, racks and bays. While, red aisle label is suitable to provide cautions, safety notices and warnings.

Benefits of warehousing labels

Following are some benefits of warehouse labels.

- Tracking—Most of the time, product manufacturers' label fail to provide enough information about the contents when it reaches the facility for storing.
- Improved Organisation and Warehouse Efficiency—The usage of warehouse labels removes mistakes like transport the incorrect item to customers' doorsteps, and mismanagement items that need to be achieved with ultimate care.

Coding

Allotting a number to each item is called a code. This process is called codification. Identifying items and categorising related inventory items. Codes often consist of a stock-keeping unit (SKU) number for bar coding or RFID coding purposes.

Coding also allows warehouse tracking system to monitor the quantity of items in inventory and their status.

Advantages of coding

The advantages of coding stocks are—

- Storing identical stocks.
- Accurate identification of items.
- Systematic posting of receipts, issues, accounting records.

- Maintaining accuracy in posting of receipts, issues, accounting records, etc.
- Material management activities for codification are the fundamental requirement for computerisation.
- It helps in standardisation and variety reductions.

Indication of colour codes

- Yellow floor tape is a caution for pedestrian aisle ways.

- Red floor tape is used for indicating emergency ways.

- Green floor tape is used for safety related equipment and raw material areas.

- Orange floor tape is used for parts of machinery areas.

- Blue floor tape shows work in progress equipment under repair zone.
- Black – Finished Goods Area
- Yellow or Black Diagonal Floor Tape – Extra Caution Areas

Practical Exercise

Activity 1

Study of labelling, coding at a warehouse

Material Required

Check-list to visit notes, notebook and pen/pencils.

Procedure

1. Visit a warehouse and see the types of packing, symbols used in packing, labeling and how coding is done, significance of colour coding.
2. Mention the appropriate option (Yes, No and give reasons)

S. No.	Activity and Functions	Yes	No	Reasons/ Remarks
1.	Did you understand the purposes of labeling and coding?			
2.	Are you able to identify the types of labeling and coding?			
3.	Are you able to identify the symbols used for labeling and coding?			
4.	Could you understand the meaning of labeling?			
5.	Were you able to learn the common labels used in warehouse?			
6.	Were you able to learn the advantages of warehouse labels?			
7.	Did you understand coding and advantages of codification?			
8.	Are you able to identify colour codes used in the warehouse?			

Check Your Progress

A. Fill in the Blanks

1. _____ are essential for efficient inventory management and the picking process throughout distribution facilities.
2. Product _____ utilise warehouses to store a wide variety of raw materials, semi processed, or finished goods.
3. Floor _____ are applicable for large warehouses with several rooms.
4. Rack labels help to identify the right _____ for storing, shipping, and inventory management.
5. Code helps to identify unit is_____, with a given item.

B. Multiple Choice Questions

1. Allotting a numeral to each item is called _____.
   (a) labelling
   (b) coding
   (c) tracking
   (d) packaging
2. Packaging outside the primary packaging is called _____.
   (a) semi primary packaging
   (b) secondary packaging

(c) tertiary packaging
(d) transit packaging

3. Labels which are largely utilised in warehouse facilities to streamline the workflow are known as _____.
   (a) aisle labels
   (b) rack labels
   (c) floor labels
   (d) None of these
4. The purpose of packaging is _____.
   (a) physical
   (b) barrier
   (c) information transmission
   (d) All of these

C. State whether True or False

1. Labeling is the technology of enclosing or protecting products.
2. Packages and labels fail to communicate how to use, transport, recycle or dispose off the package or product.
3. Warehouse labels are essential for efficient inventory management.
4. Rack labels are largely utilised in warehouse facilities to streamline the workflow.
5. Codes often consist of a stock-keeping unit (SKU) number for bar coding or RFID coding purposes.

D. Match the Columns

Match the colour of tape with the explanation

1	Yellow Floor Tape	a	Safety related equipment or raw material area
2	Black	b	Parts for machinery area
3	Blue Floor Tape	c	Finished goods area
4	Green Floor Tape	d	Caution pedestrian aisle ways
5	Orange Floor Tape	e	Safety equipment area
6	Red or White Diagonal Floor Tape	f	Work in progress, equipment under repair zone

E. Answer in Brief

1. Explain the purpose and the types of labeling.
2. What symbols are used in the warehouse and their meanings?
3. What are the advantages of codification and colour codes?

F. Check your Performance

1. Perform the labeling and coding of products in the warehouse.
2. Spell out the commonly used warehouse labels.
3. List out the benefits of using warehouse codes.

SESSION 4: MANAGE THE WAREHOUSE AND ITS ACTIVITIES

Warehouse management system (WMS)

WMS is an application that supports the daily routine of a warehouse. It facilitates in keeping a track of inventory levels and location of stocks in a warehouse.

Warehouse management systems earlier could provide only the simple storage locations but modern WMS applications are more updated and precise, and include new systems of tracking like Radio Frequency Identification (RFID) and voice recognition. Different types of software are available for WMS and the binner may choose as per requirement of the store.

Goals of a proper warehouse management system

WMS is followed in a warehouse with the following objectives—

1. To provide information on management for efficient control of the movement of material within a warehouse.
2. To support the distribution center management and staff.
3. To facilitate the entire management in its daily planning, organising, staffing, directing and controlling of available resources.
4. To support staff for storage and efficient movement of materials in and out of the warehouse.
5. To satisfy the customers' demand as these are the first and foremost tools used by businesses.

6. To fulfill the requirements of supply chain and distribution channels.
7. To ensure that minimal losses if any occur in the different warehouse processes.

Elements of WMS: a standard warehouse element includes

1. Stock keeping units (SKUs): These are the units handled and stored at the warehouse.
2. Warehouse storage locations: It shows the individual location number, the picking sequence, type of storage (case, pallet), use (picking, reserve, storage, etc.), location, size or capacity, outdoor, etc.
3. Dock doors: It includes individual number of entries, exits, etc.
4. Labour productivity: It shows the productivity of labour by function or activity, like cases picked per man-hour, etc.
5. Devices: These include RFID system, mobiles, computers, automatic storage and retrieval, etc.

All the information related to store management is recorded in the form of data.

Fig. 3.3(a): Process of Warehouse Management System

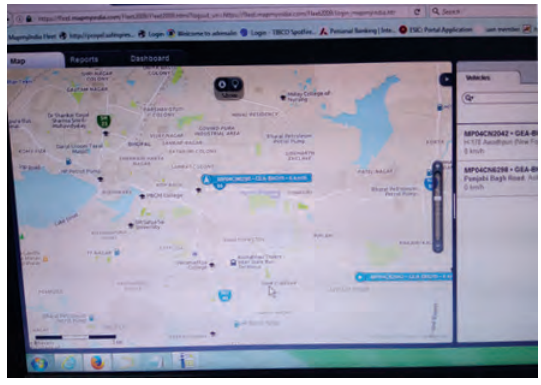


Fig. 3.3(b): Process of Warehouse Management System

Systems and processes followed by warehouses

Systems are defined by the methods used to accomplish various warehouse functions (Fig. 3.3 (a) and (b)).

Process of WMS includes—

1. Receiving Goods: The user ensures that all shipments are properly handled so that the losses can be minimised and time could be saved.
2. Tracking Inventory: A WMS enables warehouse owners to keep a check of all the stock in the warehouse.

As over-stocking is prevented it ensures better utilisation of space.

3. Slotting: WMS enables an efficient way of storing different kinds of products in a warehouse. It ensures that the arrangement of product orders is processed in a faster way.
4. Labour Visibility: WMS system eliminates the need to get more staff or labour to undertake some of the functions that are managed. The biggest labour saving is the elimination of full inventory counts. It saves labour cost.
5. Document Preparation: WMS automates most of the processes that are huge and costly to maintain. In the process, everyone has the data needed to do their job in a warehouse.
6. Picking and Shipping: WMS ensures that the right kind of product is picked based on the rules (LIFO or FIFO). It makes sure that the right orders are shipped to the right people at the right time. With this, the mistakes at the time of transportation of goods are avoided.
7. Customer Service: WMS improves overall customer service and ensures that orders are received on the committed time.
8. Tracking and Visibility: WMS will allow tracking a lot of information related to expiry dates, serial numbers, etc.
9. Reporting: WMS enables management an easy to use database and includes many reports out of the box.

Operational functions of a warehouse

Daily operational functions of warehouse include—

1. Planning—Maintaining a daily plan is essential to carry out the regular activities of the warehouse.
2. Organising—It is done with an objective to minimise the space blockage at the time of shipping and to create an order of flow to support the progress through the day.

3. Staffing—It is done to assign workers to functions and areas as per their abilities and expertise.
4. Directing—It is done to ensure the documented statutory processes and procedures are applied by all persons working in the warehouse. This function is also used to divide orders into logical work units and then assign them to separate individuals.
5. Controlling—It provides management methods so that the problems arising in a process can be resolved on time and the data can be reported for performance analysis.
6. Dock Operations—It includes functions like unloading and loading shipments, checking the damage. The driver has to note all damage and shortages on the delivery receipt before the receipt is signed. All delivery and shipment paperwork are to be submitted to department within the organisation.
7. Receiving Operations—This function is the initial point for inventory control in the warehouse.
8. Storage Operations—The function involves moving goods from the dock area to a holding location.
9. Customer Returns Operations—This is the primary function associated with customer returns, status and recording.

Thus, daily operational functions are the backbone of the warehouse activity. Presently, most of the warehouses use software for performing it and the records are maintained in the system.

Practical Exercise

Activity 1

Learn warehouse management system by performing various functions involved in warehousing and the operational activities at a warehouse.

Practical Exercise

Material Required

Check-list to visit notes, notebook and pen/pencils.

Procedure

1. Visit a warehouse near your location.
2. Divide the class in two groups—A and B
3. To study the warehouse management system, collect the following information; mention the appropriate option (Yes, No and give reasons or remarks)

S. No.	Activity and Functions	Yes	No	Reasons/ Remarks
1.	Does the warehouse you visited have a defined warehouse management system?			
2.	Do they have a system based (Software enabled system) or manual WMS?			
3.	Is the staff efficient in managing the warehouse?			
4.	Does the warehouse maintain records?			

GROUP A: Collect the following information on the systems and processes followed by a warehouse from the warehouse in-charge and ask the following questions:

1. What process do you follow to receive the goods?
2. How do you track inventory?
3. How do you slot for better efficiency in managing stored goods?
4. How do you manage labors in the warehouse premises?
5. Which documents are prepared to support WMS?
6. Which method of picking do you follow?
7. What kind of services do you give to customers?
8. Which reporting pattern do you follow?

GROUP B: Collect the following information on the operational functions of warehouse and ask the following questions:

1. How do you plan a day, week and a month?
2. How do you organise orders to be picked?
3. How do you assign job to workers?
4. What are the necessary documents prepared for operational functions?
5. How do you handle customer returns?
6. How do you monitor progress in a day?

Check Your Progress

A. Fill in the Blanks

1. _____ is an application that supports the daily routine operations in a warehouse.
2. Warehouse management systems use _____ for tracking.
3. _____ include individual number of entry and exit.
4. WMS improves overall customer _____.
5. _____ is the inventory by location with manufacture date and code of lot.

B. Multiple Choice Questions

1. Which function involves sequencing orders to be picked?
   (a) Planning
   (b) Directing
   (c) Organising
   (d) Staffing
2. Tracking and visibility includes tracking information related to _____.
   (a) expiry date
   (b) serial numbers
   (c) warranty issues
   (d) All of these
3. Which one is not an operational function at a warehouse?
   (a) Planning
   (b) Tracking
   (c) Organising
   (d) Directing
4. Which process of WMS includes rules for Picking— LIFO or FIFO?
   (a) Document Preparation
   (b) Picking and Shipping
   (c) Customer Service
   (d) Reporting

C. State whether True or False

1. Staffing function includes the daily plan for receiving dock activity.
2. Dock operations include functions like unloading and loading shipments and checking for the damages.
3. Tracking does not ensure the warehouse management that there is enough stock in the warehouse.
4. WMS uses a database to support warehouse operations.

5. Stock keeping units (SKUs) means keeping inventory by location.

D. Match the Columns

Match the operation functions at a warehouse with their purpose—

1.	Planning	(a)	Verifying product quantity, receiving reports and sending them to the designated departments.
2.	Controlling	(b)	Verifying what was returned, deciding whether credit should be sanctioned based on its condition.
3.	Directing	(c)	To assign workers to functions and areas as per their ability and expertise.
4.	Staffing	(d)	Selecting the orders to be processed in the day or night shift.
5.	Receiving Operations	(e)	Ensures documented statutory processes.
6.	Customer Return Operations	(f)	Provides management methods to monitor progress through the day.

E. Short Answer Questions

1. What are the goals of proper warehouse management system?
2. What are the elements of warehouse management system?
3. What is the process of warehouse management system?
4. Describe the various operational functions of a warehouse.

F. Check your Progress

1. Demonstrate the goals of a proper warehouse management system.
2. Spell out the elements of warehouse management system.
3. List out the benefits of codes at warehouses.
4. Draw a figure describing the process of warehouse management system.
5. Demonstrate the operational functions of warehouse.

RETAIL - WAREHOUSE BINNER - CLASS 9

UNIT 3 : BIN MANAGEMENT

SESSION 1: BINNING AND MATERIAL REQUIRED

Check Your Progress

A. Fill in the Blanks

1. Binner is the individual whose role is to _____ in to the storage bins, according to an inventory list.
2. Binner at times is responsible for moving cargo, repacking and _____ the items.
3. The key features to consider in classifying the inventory are the _____ and _____ of the stored goods.
4. Larger quantities of goods can be _____ and _____ more quickly.
5. To move cargo, _____ items and documenting cargo with the products shipping for distribution.

B. Multiple Choice Questions

1. Which are the key competencies of a warehouse binner?
   (a) Knowledge of the types of products and goods being handled.
   (b) Understanding the methods, sequence and material.
   (c) In-depth knowledge of the procedures.
   (d) All of these.
2. Allocating right storage solutions to the inventory means _____.
   (a) putting similar products in the same place
   (b) contacting the right company for storage
   (c) unloading the products properly
   (d) None of these
3. Automating processes result in _____.
   (a) higher picking accuracy of up to 99.9 per cent
   (b) better monitoring
   (c) better inventory
   (d) All of these
4. Picking method of dividing the storage area into various sections is known as _____.
   (a) batch picking
   (b) zone picking
   (c) parallel picking
   (d) None of these

5. Finding the optimal position for each individual product within the warehouse is the _____.
   (a) Retrieval frequency
   (b) Number of recover units in each case
   (c) Number of units to be stored
   (d) All of the above

C. State whether True or False

1. Bread is kept in a dust or rubbish bin.
2. The storage of the goods could vary based on the requirement and type of goods.
3. A warehouse clerk is an individual whose role is to bin or store the items into the storage bins.
4. Binners should have understanding of methods, sequence and material for cleaning variety of surfaces, equipment and machinery.
5. It is not necessary to put similar items at the same place.

D. Match the Columns

1	Binner	a	Working knowledge of technology and equipment used for scanning products and binning goods.
2	Competencies of a binner	b	Sticker all product with an information label.
3	Track and store	c	Higher picking accuracy of up to 99.9%.
4	Automating processes	d	To bin or store the items into the storage bins according to an inventory list.

E. Answer in Brief

1. How are the goods received at a warehouse classified?
2. Explain the importance of binning process at a warehouse.
3. Describe the functions of a binner.

F. Check your Performance

1. Demonstrate your observations and provide suggestions from the practical session of your visit to the warehouse.
2. Spell out procedures followed in the warehouse while performing inward and outward activity of goods.
3. Demonstrate the competencies that each student possesses after the practical session.

SESSION 2: STORAGE SYSTEM UNDER BINNING

Check Your Progress

A. Fill in the Blanks

1. Categorised storage of goods is a function of _____.
2. _____ means the goods which are coming into the warehouse for storage for a certain period of time.
3. The place where the goods are stored is called _____.
4. Full form of FMCG is _____.
5. Furniture is an example of _____ good.

B. Multiple Choice Questions

1. Warehousing provides time and place utility for _____.
   (a) raw material
   (b) industrial goods
   (c) finished products
   (d) All of the above
2. Functions of warehousing include _____.
   (a) transportation consolidation
   (b) docking
   (c) service
   (d) All of the above
3. Among the following, industrial goods are _____.
   (a) conductor and generator
   (b) machines, inverter and weighing machines.
   (c) (a) and (b) both
   (d) None
4. Shelving is the fundamental tool in _____.
   (a) handling material
   (b) racking
   (c) (a) and (b) both
   (d) None
5. Multi-tier storage is the solution for
   (a) storage
   (b) picking
   (c) packing
   (d) All of the above

C. State whether True or False

1. The goods which are coming into the warehouse for storage are known as outbound goods.
2. Proper planning of classification and specification of goods is not essential before storing in warehouses.
3. It is not possible to segment goods on the basis of same destination in a warehouse.
4. Bread, biscuit and chips are the examples of durable goods.
5. Multi-tier storage is the ideal storage solution.

D. Answer in Brief

1. Describe the classification of goods for storage.
2. Explain segmenting the goods on the basis of same destination.
3. What is shelve storage?
4. What is mobile shelving?
5. What do you understand by FMCG goods?
6. What do you understand by pallet racking?

E. Check your Performance

1. Classify the goods on the basis of storage.
2. Show how to put items in shelve storage.
3. Demonstrate different kinds of warehouse storage.

SESSION 3: LABELING AND CODING OF GOODS

Check Your Progress

A. Fill in the Blanks

1. _____ are essential for efficient inventory management and the picking process throughout distribution facilities.
2. Product _____ utilise warehouses to store a wide variety of raw materials, semi processed, or finished goods.
3. Floor _____ are applicable for large warehouses with several rooms.
4. Rack labels help to identify the right _____ for storing, shipping, and inventory management.
5. Code helps to identify unit is_____, with a given item.

B. Multiple Choice Questions

1. Allotting a numeral to each item is called _____.
   (a) labelling
   (b) coding
   (c) tracking
   (d) packaging
2. Packaging outside the primary packaging is called _____.
   (a) semi primary packaging
   (b) secondary packaging
   (c) tertiary packaging
   (d) transit packaging
3. Labels which are largely utilised in warehouse facilities to streamline the workflow are known as _____.
   (a) aisle labels
   (b) rack labels
   (c) floor labels
   (d) None of these
4. The purpose of packaging is _____.
   (a) physical
   (b) barrier
   (c) information transmission
   (d) All of these

C. State whether True or False

1. Labeling is the technology of enclosing or protecting products.
2. Packages and labels fail to communicate how to use, transport, recycle or dispose off the package or product.
3. Warehouse labels are essential for efficient inventory management.
4. Rack labels are largely utilised in warehouse facilities to streamline the workflow.
5. Codes often consist of a stock-keeping unit (SKU) number for bar coding or RFID coding purposes.

D. Match the Columns

Match the colour of tape with the explanation

1	Yellow Floor Tape	a	Safety related equipment or raw material area
2	Black	b	Parts for machinery area
3	Blue Floor Tape	c	Finished goods area
4	Green Floor Tape	d	Caution pedestrian aisle ways
5	Orange Floor Tape	e	Safety equipment area
6	Red or White Diagonal Floor Tape	f	Work in progress, equipment under repair zone

E. Answer in Brief

1. Explain the purpose and the types of labeling.
2. What symbols are used in the warehouse and their meanings?
3. What are the advantages of codification and colour codes?

F. Check your Performance

1. Perform the labeling and coding of products in the warehouse.
2. Spell out the commonly used warehouse labels.
3. List out the benefits of using warehouse codes.

SESSION 4: MANAGE THE WAREHOUSE AND ITS ACTIVITIES

Check Your Progress

A. Fill in the Blanks

1. _____ is an application that supports the daily routine operations in a warehouse.
2. Warehouse management systems use _____ for tracking.
3. _____ include individual number of entry and exit.
4. WMS improves overall customer _____.
5. _____ is the inventory by location with manufacture date and code of lot.

B. Multiple Choice Questions

1. Which function involves sequencing orders to be picked?
   (a) Planning
   (b) Directing
   (c) Organising
   (d) Staffing
2. Tracking and visibility includes tracking information related to _____.
   (a) expiry date
   (b) serial numbers
   (c) warranty issues
   (d) All of these
3. Which one is not an operational function at a warehouse?
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   (b) Tracking
   (c) Organising
   (d) Directing
4. Which process of WMS includes rules for Picking— LIFO or FIFO?
   (a) Document Preparation
   (b) Picking and Shipping
   (c) Customer Service
   (d) Reporting

C. State whether True or False

1. Staffing function includes the daily plan for receiving dock activity.
2. Dock operations include functions like unloading and loading shipments and checking for the damages.
3. Tracking does not ensure the warehouse management that there is enough stock in the warehouse.
4. WMS uses a database to support warehouse operations.

5. Stock keeping units (SKUs) means keeping inventory by location.

D. Match the Columns

Match the operation functions at a warehouse with their purpose—

1.	Planning	(a)	Verifying product quantity, receiving reports and sending them to the designated departments.
2.	Controlling	(b)	Verifying what was returned, deciding whether credit should be sanctioned based on its condition.
3.	Directing	(c)	To assign workers to functions and areas as per their ability and expertise.
4.	Staffing	(d)	Selecting the orders to be processed in the day or night shift.
5.	Receiving Operations	(e)	Ensures documented statutory processes.
6.	Customer Return Operations	(f)	Provides management methods to monitor progress through the day.

E. Short Answer Questions

1. What are the goals of proper warehouse management system?
2. What are the elements of warehouse management system?
3. What is the process of warehouse management system?
4. Describe the various operational functions of a warehouse.

F. Check your Progress

1. Demonstrate the goals of a proper warehouse management system.
2. Spell out the elements of warehouse management system.
3. List out the benefits of codes at warehouses.
4. Draw a figure describing the process of warehouse management system.
5. Demonstrate the operational functions of warehouse.

Unit 4

Methods and Procedures of Binning

Binners use different methods to bin the material received in a warehouse. These methods are ABC method, Two Bin methods, Three Bin methods, etc.

Warehouses are becoming increasingly complex. They need to be agile and efficient as they handle more orders with greater speed and increased accuracy. The number of successful transactions, e.g., picks, put away, transactions in process, and transactions in error can be monitored online and in real time.

Storage is an essential activity for many businesses. Goods are stored to avoid sudden shortage. In order to avoid the situation, such as, price rise or sudden surge in demand, warehousing of goods is a good option. Raw material needs supplies during a production cycle.

Goods received in a warehouse are recorded in the form of documents. Documentation practice is a very important part of the warehouse. The systematic record of documents makes it very easy to identify, authenticate and also prove the accuracy. When the documentation process is in place then the record maintenance automatically becomes better.

Risk is an integral part of warehousing. A first step in risk management is to determine what risks we face in a global economy.

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Risk handling is also one of the important parts of binning activities. Binner should be very careful at the time of various operational activities.

To provide knowledge and skills on these aspects this unit is divided in to four sessions. The first session explains binning method, second session deals with procedure of binning, the third session provides knowledge on storage of goods and documentation and the fourth session elaborates on risks in binning.

SESSION 1: BINNING METHODS

There are different methods of binning for storage goods. Some of the methods with their descriptions are given in the following table—

S.No.	Methods	Description
1	ABC	This is the most common method in Indian industry for better control on inventory. This depends more on inventory classification technique.
2	Two Bin	In this method an item is stored in two locations or bins in a warehouse.
3	Three Bin	This is a common method followed in manufacturing where Kanban system (providing a signal for reordering or replenishing stock) is used.
4	Fixed Order Quantity	A fixed quantity can be ordered at one time for the item. To avoid ordering mistakes and ensure regular replenishment of existing products
5	Fixed Period Ordering	In this system, there is fixed time interval between every order placed for the item.

Two bin method

Figure 4.1 explain the two bin method.

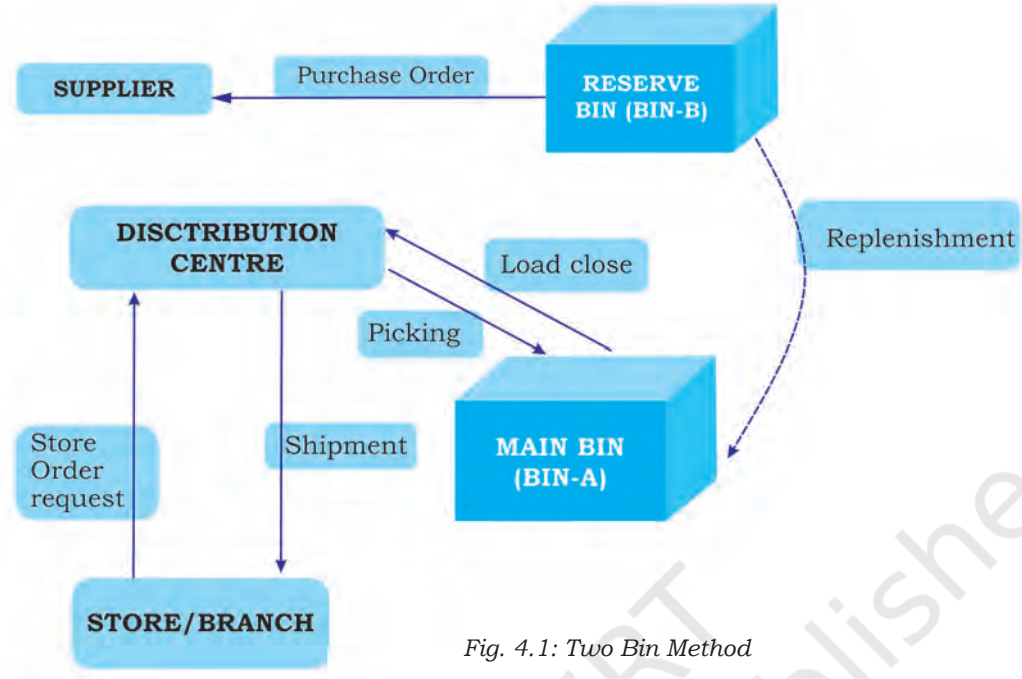

Fig. 4.1: Two Bin Method

Three bin method

Figure 4.2 will explain the above process (with respect to a retail scenario).

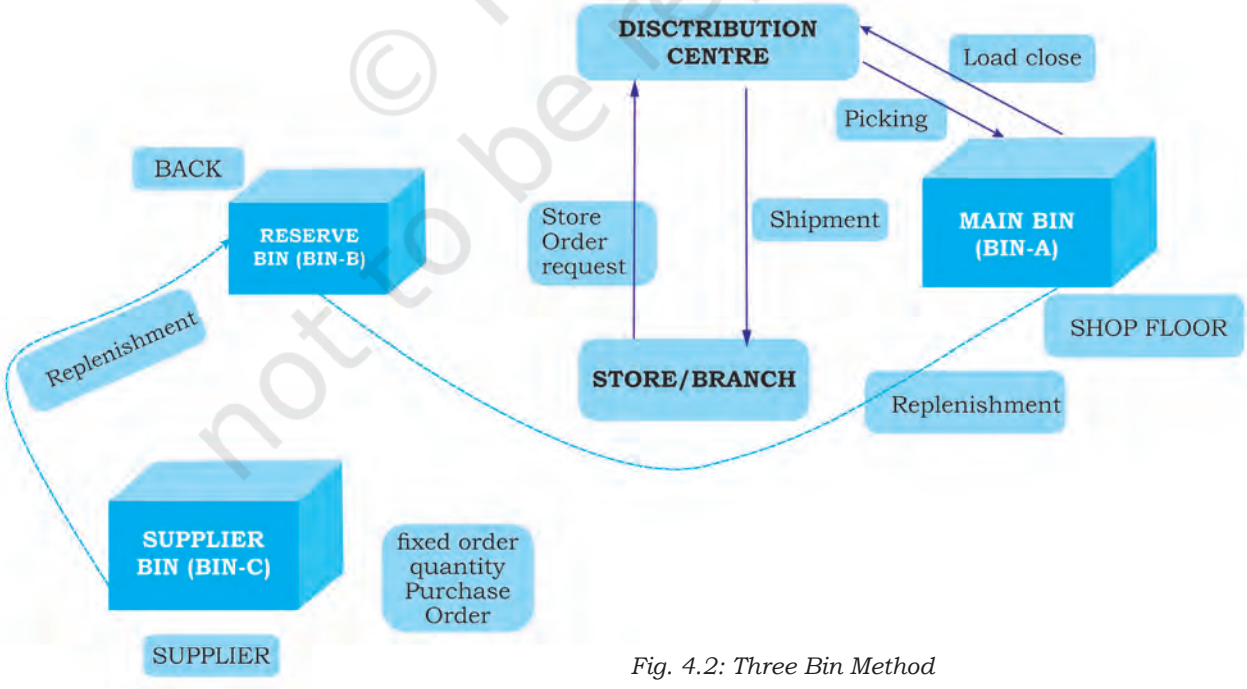

Fig. 4.2: Three Bin Method

Fixed order quantity

The following explains the scenario of a fixed order quantity.

Product Code	Product	Min Stock	Max Stock	Stock on Hand	Recommended Order Qty
3391891961066	Ice Cube Tray Pink	4	24	4	20

Practical Exercise

Activity 1

Demonstrate the binning methods in a given situation.

Material Required

Check-list to visit notes, notebook and pen/pencils.

Procedure

1. Visit a warehouse to demonstrate the different binning methods.
2. Prepare a small chart on binning methods.
3. Submit it to your teacher.

Check Your Progress

A. Fill in the Blanks

1. _____ method in Indian industry is applicable for better control on inventory.
2. _____ method is to increase the inventory turnover and at the same time reduce the inventory holding cost.
3. _____ method is used to avoid ordering mistakes and ensure regular replenishment of existing products.
4. _____ method is used usually in warehousing wherein an item is stored in two locations.
5. _____ method is followed in manufacturing where Kanban system is used.

B. State whether True or False

1. Two bin method is usually used in storage at two locations.
2. Three Bin method is a complex method to store the goods.

3. Just in time means doing the work in seconds.
4. There are various methods to arrange the inventory.
5. Fixed order quantity is to avoid ordering mistakes.

C. Match the Columns

	Column A		Column B
1.	Fixed Order Quantity	(a)	Fixed time interval between every order
2.	Fixed Period Ordering	(b)	Inventory is replenished based on the sales on regular intervals by the vendor
3.	Just in Time	(c)	Ensure regular replenishment of existing products
4.	Vendor Managed Inventory	(d)	Increase the inventory turnover and at the same time reduce the inventory holding cost
5.	Reorder level policy	(e)	Economic order quantity

D. Short Answer Questions

1. Explain the different types of binning methods.
2. Examine the application of different binning methods.

E. Check your Performance

1. Demonstrate the methods of binning as per the nature of storage goods.
2. Draw diagrams of Two Bin and Three Bin methods.
3. Demonstrate the benefits of using warehouse labels at facility.
4. List out the benefits of using warehouse codes.
5. Draw a figure explaining process of warehouse management system.
6. Demonstrate the operational functions of warehouse.

SESSION 2: PROCEDURE OF BINNING

Binning process

Warehouses are becoming increasingly complex. They need to be agile and efficient as they handle more orders with greater speed and increased accuracy. The binner

monitors every transaction through its various stages, which could be from receiving, to when the goods are ready to leave the warehouse. Several steps are followed by the binner between receiving of goods and making it outbound (figure 4.3).

Fig. 4.3: Binning Process

The following is a step-by-step description of the binning process.

Step 1: Receipt of goods

The binner will get the receipt of the goods and check the items as per the list mentioned in the receipt. At the

time of receiving the goods the following things should be checked:

- Right product
- Right quality
- Right quantity
- Right weight
- Right condition
- Right standard
- Right time
- Right place and
- Right person

Step 2: Sorting and checking

This is the next step after receiving the goods. The binner will then sort the goods. It is also mandatory for him to check whether the mentioned goods in the list are correct or not. Along with this he will also crosscheck availability of the space for the items or listed goods.

Step 3: Storing the goods at appropriate place

After checking the goods inside, one of the important responsibilities of the binner is to allocate the goods at right place. Now, the binner will arrange the goods based on popularity (Figure 4.4). The arranged goods will be placed as mentioned in the place of each item. The binner will follow the two methods mentioned below:

FIFO (first in first out): This is used to arrange the goods on the basis of regular requirement.

For example, the consumable items (e.g. packed foods, ready to eat, fruits and vegetables, etc.), which have less expiry period, so they are moved out immediately after manufacturing and those products should be sold within a short period of time.

FILO (first in last out): This method is used to arrange the goods as per their nature and their requirements. It is also based on assumptions that goods are sold.

For example, the items which have a longer expiry date and can wait for a year or more in the

Fig. 4.4: Storage of Goods in Racks

inventory, as in the case of woollen items, can be stored in a warehouse and be moved out next year.

Step 4: Recording the goods as per the details at its proper location

After the goods are stored at the right place, the recording process starts in which, the description of the goods is given. The description list will have a number of columns in which material code, location code, etc., are mentioned. This is also known as bin card (Fig. 4.5). The bin card contains description, material code, location code, bin number, ordering level, ordering quantity, etc.

Bin Card							
Description				Minimum Level			
Material Code				Maximum Level			
Location Code				Ordering Level			
Bin No.				Ordering Quantity			
Receipts			**Issues**			**Balance**	**Amount**
Date	GRN No.	Qty	Date	Regn. No.	Qty	Date	Initials

Fig. 4.5: Sample Format of a Bin Card

Step 5: Receiving outbound requirements

Once the recording process is over, the binner will start, receiving outbound requirements. When the binner receives the requirement lists from the supervisor he checks the stock availability as per the requirement mentioned in the lists. If the goods are available, then the binner will take out the goods from the specific place and cross check it again. After cross checking the lists, the binner will inform the reporting person about it. The binner will also give the checklist (the items which are moved out from the area) and the received list to the reporting manager. Figure 4.6 explains how goods are loaded in the containers.

Fig. 4.6: Loading Goods in Containers

Step 6: Sorting and packaging

Sorting is the differentiating of items which have been received or moved out from the bay area. Sometimes the binner has to do packaging work, when the received goods are loose (e.g. wheat, rice, pulses, etc.). This can be an additional work for the binner. After completion of this work, the binner will be responsible in arranging the packed goods in their proper places.

Other activities

The binner should be a multilevel performer in the warehouse. He should not only engage himself in the binning process but also take care of other activities as well. He has to perform the following roles when required in the warehouse—

- Preparing and performing binning, post-binning and housekeeping and post-housekeeping activities.
- Receiving all packages and checking them for errors.
- Pre-packing goods before storing, locating bay area, binning products from the pick list, and storing them on shelves.
- Checking binned items for errors and reporting the status of binned inventory to the supervisor.
- Complying with the safety, security and maintenance regulations.

The key competencies of a binner include—

- Knowledge of the types of products and goods being handled, binning and stock recording methods.
- Working knowledge of technology and equipment used for scanning products and binning goods.
- Understanding the methods, sequence and material for cleaning variety of surfaces, equipment and machinery.
- In-depth knowledge of the process for disposing waste, disposing or storing equipment, reporting unidentified soiling, etc.

Practical Exercise

Activity 1

Visit a warehouse in your area and interact with the owner regarding binning, and prepare a report in not more than 50 words.

Material Required

Check-list to visit notes, notebook and pen and pencils.

Procedure

1. Arrange a visit to a warehouse nearby.
2. Greet the people you meet at the warehouse.
3. Meet a warehouse binner if available.
4. Ask them to explain the basics of the binning process.
5. Write the process of binning in your copy.
6. Draw a step chart of binning activity.
7. Ensure about your work completion.
8. Discuss with your classmates in front of the teacher.
9. Write the conclusion.

Activity 2

Role Play

Note: Divide the class into groups, four students in each group and ask them to perform the following binning activities stepwise in the warehouse.

- 1st student: Receipt of goods
- 2nd student: Sorting and checking
- 3rd student: Storing the goods at appropriate place
- 4th student: Recording the goods
- 5th student: Receiving outbound requirements
- 6th student: Other additional activity
- Finally ask the fourth student to share their views before and after the activity.

Check Your Progress

A. Fill in the Blanks

1. The _____ will receive the receipt of the goods and check the items as per the list mentioned in the receipt.
2. Binner is sorts the goods and checks it through _____.
3. _____, _____and _____ are the three methods used for arrangement of the goods.
4. The _____ contains description, material code, location code, bin number ordering level, ordering quantity.

5. The binner will report to the _____ after completion of the binning process.
6. Sorting means differentiating the items which has been received or moved out from the _____.

B. State whether True or False

1. Binner sorts the inbound goods in a warehouse.
2. Binner receives the outbound goods directly from the transporter.
3. Binner is not very important person in a warehouse.
4. The binner should be a multilevel performer in the warehouse.
5. Bin card is used for checking the receivables to crosscheck the goods.

C. Word Puzzle – Rearrange the words and make the correct among them

1. inb .....
2. erstor .....
3. triongs .....
4. eatrialsm .....
5. useareohw .....

D. Answer in Brief

1. Describe FIFO method.
2. Describe FILO method.
3. Explain the binning methods.
4. State the steps in warehouse binning process.

E. Check your Progress

1. Draw a diagram on chart containing binning process.
2. Demonstrate the steps of warehouse binning process.
3. Carefully read the bin card and fill it correctly.
4. Demonstrate how to perform binning activities.

SESSION 3: STORAGE OF GOODS AND DOCUMENTATION

Storage is an essential activity for many businesses. Goods are stored to avoid sudden shortage. In order to avoid the situation, such as, price rise or sudden surge in demand, warehousing of goods is a good option. Raw material is also stored to ensure supplies during

a production cycle. During the storage process, it is the binner who facilitates the storage activity in the following ways —

(a) Sticker the product with information: It ensures that when you are going through the records, one can easily track and store it.

(b) Put similar products in the same place: When you have an abundance of inventory, it helps to keep the same types of products in the same place, one can easily find an item. For example, if you are wandering around the warehouse looking for microwaves, you will know that once you have found one, you've discovered them all.

(c) Keep the walkway clear: The more cluttered your warehouse walkways are, the harder it will be to find what you need.

(d) Placing digital figures on boxes: The digital appearance on the outside of each boxes is essential to create a systematic warehouse space.

Meaning of documentation

Documentation means organising various papers in a particular format and filing the papers to understand and find them easily.

What is documentation in binning?

Recording of goods manually or with the help of a computer operationally is known as documentation.

It is a process which comprises of the following—

- Recording data
- Support of documents
- Retrieval of documents
- Issuing and disposing
- Presentation of documents
- Reviewing the documents

Good documentation practice plays an important role in our lives, not only in binning, but it also helps us to smoothly manage our personal, as well as, professional life. The systematic records of documents make it easy to identify, authenticate and prove accuracy. When

the documentation process is good then the record maintenance automatically becomes better.

Purpose of documentation

The purpose of documentation in binning is—

- Proof of fact
- Record
- Quality maintenance
- Regulatory requirements
- End user requirement
- Improve performance

Documents and their descriptions are listed below:

Documents required at the time of binning	Description
ID Code	An identification code.
On hand	How many items are currently available in stock for use?
On order	How many items have been already ordered from the suppliers and when are they due to arrive?
Lead time	Time taken between the order and delivery. A common error is not to include the time that is taken by the supplier to process the order and the time that is taken for inspection upon delivery.
Planning data	• List of finished products. • List of Material. • List of Suppliers. • Material Quantities per house. • List of materials per supplier.

Types of documentation

The following are the types of documentation followed during the binning process.

Manual

In this process information about the items received or moved out from the bay area are entered manually.

Material receipt, labelling, and acceptance, etc., are examples of manual documentation.

Automatic using worksheet

In this process, the binner uses a computer in which he captures, identifies, stores, and disposes the business records according to policies. It helps to improve auditing with activity logging and speedy process verification.

Both manual and automatic

Sometimes the binner performs both the activities. After handling the goods manually, he enters the description of items or goods in the operating system.

Practical Exercise

Activity 1

Prepare a list of various documents used at the time of binning.

Material Required

Checklist to visit notes, notebook and pen/pencils.

Procedure

1. Make a list of various documents used at the warehouse.
2. Find out all the binning documents used.
3. Discuss about those documents in the class.
4. Teacher will conclude the session.
5. Note down the conclusion given by the teacher.
6. Make a new list of documents and submit it to your teacher.

Check Your Progress

A. Fill in the Blanks

1. Goods are stored to avoid _____ for supply.
2. To easily track and store the product _____ is used.
3. Recording of the goods is called as _____.
4. The documentation done for the products received or moved out from the bay area is known as _____ documentation.
5. Time that taken between the order and delivery is called as _____.

B. Write the correct description of each document

ID Code	
On hand	
On order	
Lead time	
Planning Data	

C. Rearrange the following words and form a correct word

1. ocudmetionnta .....
2. uaqlity .....
3. ratoegulry .....
4. ctadoumention .....
5. lllingabe .....
6. mpcoroltler .....

D. Answer in Brief

1. Demonstrate the storage process.
2. List out the purpose of documentation in binning.
3. Demonstrate types of documentation in binning process.
4. Draw a diagram on the storage process.

Session 4: Risks Involved in Binning

The first step in risk management is to determine what risks we face in a global economy. Risk handling is also one of the important parts of binning activities. The binner should be very careful at the time of various operational activities.

Types of risks in binning process

The risks at the time of binning can be divided into three parts. (Fig. 4.7)

1. Physical risk: The physical risk of the binner includes an

Fig. 4.7: Risks in Binning

occupational risk that involves hazards and dangers that can cause harm with or without contact. Suppose, if the goods or items are not kept properly and it falls on somebody, it might cause an injury or any other physical harm.

Risks	Who is at risk and how?	Control measures	Further actions
Slips and trips	Staff or customers may suffer sprains, factures, etc., if they trip over objects or slip on spillages.	The floor should be kept dry, all staff must be trained to maintain proper housekeeping, the empty bins should be cleaned and kept away till use, wear non-slip footwear, pallets should be stored safely in a designated area.	Extra bin should be provided for waste material, staff should be trained to clean the dirty area immediately to avoid any risk.
Manual handling (should be specific task if various manual handling tasks are undertaken)	Injuries to the back or other injuries at the time of handling heavy objects.	Proper training must be given in lifting or handling the heavy goods objects, lift trucks should be available, manual handling should also be minimised.	
Falling objects	Injuries can occur at the time of managing the goods in the racks.	Goods should be properly handled and kept at their own place.	Areas should be specific.

2. Operational risk: It is a harm resulting from insufficient or unsuccessful procedures, systems or rules, worker blunders, system failures, fraud or other illegal activity. Any event that disrupts business processes can be termed as an operational risk.

Risks	Who is at risk and how?	Control measures	Further actions
Machinery	The one who operates the machine.	One should be an expert at handling the machineries.	The machines should be in good condition.
Traffic movement	Binner or goods at the time of moving the machines from one place to another place.	Traffic should not be more than the allowed level.	Timely management and keeping of goods at the appropriate place for ease of traffic movement.
Temperature of the working place	Goods can be damaged and sometimes the workers also face problems.	The temperature should be managed as per requirement.	A policy on temperature regulation should be implemented for the whole year.
Product damage	The binner, as well as, the warehouse owner.	Handling the goods and equipment in a proper manner.	Spread awareness among workers.
Inventory discrepancies	Due to damage or loss of inventories shortages can occur.	Try to avoid such occurences.	Stock should be maintained.
Wrong shipments	The goods can be misplaced at the time of storing.	Recording should be as per goods received.	Cameras should be installed.

3. Personal risk: Occupational hazards, injury while handling sharp and heavy objects, pallet trolleys, etc., may occur while working in a warehouse.
4. Health risks: Exposure to harmful material, chemicals, gases, etc., may cause respiratory and other disorders leading to health risks.

Risks	Who is at risk and how?	Control measures	Further actions
Fall from height	If the goods are not kept at right place, it can fall from height and harm the workers	Should handle the machines and goods appropriately	Should be aware for future operations

Movement from one place to another	At the time of moving from one place to another if some goods like, oil and slippery things are spilled, then the person can get sprains, facture, etc.	Oil and slippery things should be handled with care.	Gather proper information on handling specific goods.
Manual handling	Handling the goods in a proper manner at the time of manual handling.	The instruction should be followed at the time of handling the goods manually.	Proper handling procedure should be notified.
Injuries from machines	Know properly how to handle the machines.	Machines should be in good condition.	Cautions should be displayed.
Death risk	Various hazards can cause death.	Should work safely	All employeer should be insured for life.

Remedial steps — first hand methods

A few remedial steps which can be followed to avoid immediate risks are listed below—

1. First aid kit should be maintained
2. A doctors phone number should be available in case of emergency
3. Primary health centers should be notified immediately.
4. Do's and Don'ts should be mentioned at the appropriate places for everybody to see and remember.

Practical Exercise

Activity 1

Visit a warehouse and handle risks in a given situation.

Material Required

Check-list to visit notes, notebook and pen/pencils.

Procedure

1. Arrange a visit to a warehouse nearby.
2. Greet the people you meet at the warehouse.
3. Meet a warehouse binner if available.
4. Ask them to explain the various risks involved in binning methods.
5. Write down the process of handling and the risks of binning.
6. Discuss with your classmates in front of your teacher.
7. The teacher will conclude the session with findings.

Check Your Progress

A. Situation Analysis: Suppose there is a multispecialty warehouse performing several activities at one time and the warehouse manager is asked to switch the staff from their associated duties. The risks may also differ as per different activities. Draw a chart on a board to differentiate those risks and also explain different control measures.

B. Fill in the Blanks

1. The _____ risk is of the binner includes the risk which is a type of occupational risk that involves hazards that can cause harm with or without contact. (physical/operational)
2. _____ risk is defined as harm resulting from insufficient or unsuccessful procedures, systems or rules. (operational/physical)
3. _____ risk occurs while working in a warehouse with exposure to harmful material, chemicals, gases, etc. (personal/physical)
4. To lift or handle the heavy goods, the binner should be _____ properly. (trained/maintained)

C. State whether True or False

1. The binner operates the machines.
2. The binner is treated as delivery boy.
3. The binner must be aware of handling various risks in binning process.
4. The binner is responsible for any damage to the machinery.
5. The binner is the only responsible person in handling warehouse management.

D. Match the Columns

	Risks		Further actions
1.	Fall from height	(a)	Proper handling procedure should be notified
2.	Movement from one place to another	(b)	Insurance should be there
3.	Manual handling	(c)	Should be aware
4.	Injuries from machine	(d)	Take proper information
5.	Death risk	(e)	Cautions should be displayed

E. Answer in Brief

1. Explain the types of risks in the binning process.
2. What are the different types of risks involved during binning process?

F. Assessing Risk

A few warehousing hazards are illustrated in the figure below. In the following table, identify the hazards and place them in a Risk Assessment Zone.

Warehouse hazards

Can you find all the hazards?

G. Check your Performance

1. Demonstrate the types of risks in the binning process.
2. List out the physical risks in the binning process.
3. Demonstrate personal risks in the binning process.
4. Spell out the operational risks in the binning process.
5. Demonstrate the remedial steps.

RETAIL - WAREHOUSE BINNER - CLASS 9

UNIT 4 : METHODS AND PROCEDURES OF BINNING

SESSION 1: BINNING METHODS

Check Your Progress

A. Fill in the Blanks

1. _____ method in Indian industry is applicable for better control on inventory.
2. _____ method is to increase the inventory turnover and at the same time reduce the inventory holding cost.
3. _____ method is used to avoid ordering mistakes and ensure regular replenishment of existing products.
4. _____ method is used usually in warehousing wherein an item is stored in two locations.
5. _____ method is followed in manufacturing where Kanban system is used.

B. State whether True or False

1. Two bin method is usually used in storage at two locations.
2. Three Bin method is a complex method to store the goods.
3. Just in time means doing the work in seconds.
4. There are various methods to arrange the inventory.
5. Fixed order quantity is to avoid ordering mistakes.

C. Match the Columns

	Column A		Column B
1.	Fixed Order Quantity	(a)	Fixed time interval between every order
2.	Fixed Period Ordering	(b)	Inventory is replenished based on the sales on regular intervals by the vendor
3.	Just in Time	(c)	Ensure regular replenishment of existing products
4.	Vendor Managed Inventory	(d)	Increase the inventory turnover and at the same time reduce the inventory holding cost
5.	Reorder level policy	(e)	Economic order quantity

D. Short Answer Questions

1. Explain the different types of binning methods.
2. Examine the application of different binning methods.

E. Check your Performance

1. Demonstrate the methods of binning as per the nature of storage goods.
2. Draw diagrams of Two Bin and Three Bin methods.
3. Demonstrate the benefits of using warehouse labels at facility.
4. List out the benefits of using warehouse codes.
5. Draw a figure explaining process of warehouse management system.
6. Demonstrate the operational functions of warehouse.

SESSION 2: PROCEDURE OF BINNING

Check Your Progress

A. Fill in the Blanks

1. The _____ will receive the receipt of the goods and check the items as per the list mentioned in the receipt.
2. Binner is sorts the goods and checks it through _____.
3. _____, _____and _____ are the three methods used for arrangement of the goods.
4. The _____ contains description, material code, location code, bin number ordering level, ordering quantity.
5. The binner will report to the _____ after completion of the binning process.
6. Sorting means differentiating the items which has been received or moved out from the _____.

B. State whether True or False

1. Binner sorts the inbound goods in a warehouse.
2. Binner receives the outbound goods directly from the transporter.
3. Binner is not very important person in a warehouse.
4. The binner should be a multilevel performer in the warehouse.
5. Bin card is used for checking the receivables to crosscheck the goods.

C. Word Puzzle – Rearrange the words and make the correct among them

1. inb .....
2. erstor .....
3. triongs .....
4. eatrialsm .....
5. useareohw .....

D. Answer in Brief

1. Describe FIFO method.
2. Describe FILO method.
3. Explain the binning methods.
4. State the steps in warehouse binning process.

E. Check your Progress

1. Draw a diagram on chart containing binning process.
2. Demonstrate the steps of warehouse binning process.
3. Carefully read the bin card and fill it correctly.
4. Demonstrate how to perform binning activities.

SESSION 3: STORAGE OF GOODS AND DOCUMENTATION

Check Your Progress

A. Fill in the Blanks

1. Goods are stored to avoid _____ for supply.
2. To easily track and store the product _____ is used.
3. Recording of the goods is called as _____.
4. The documentation done for the products received or moved out from the bay area is known as _____ documentation.
5. Time that taken between the order and delivery is called as _____.

B. Write the correct description of each document

ID Code	
On hand	
On order	
Lead time	
Planning Data	

C. Rearrange the following words and form a correct word

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6. mpcoroltler .....

D. Answer in Brief

1. Demonstrate the storage process.
2. List out the purpose of documentation in binning.
3. Demonstrate types of documentation in binning process.
4. Draw a diagram on the storage process.

SESSION 4: RISKS INVOLVED IN BINNING

Check Your Progress

A. Situation Analysis: Suppose there is a multispecialty warehouse performing several activities at one time and the warehouse manager is asked to switch the staff from their associated duties. The risks may also differ as per different activities. Draw a chart on a board to differentiate those risks and also explain different control measures.

B. Fill in the Blanks

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3. _____ risk occurs while working in a warehouse with exposure to harmful material, chemicals, gases, etc. (personal/physical)
4. To lift or handle the heavy goods, the binner should be _____ properly. (trained/maintained)

C. State whether True or False

1. The binner operates the machines.
2. The binner is treated as delivery boy.
3. The binner must be aware of handling various risks in binning process.
4. The binner is responsible for any damage to the machinery.
5. The binner is the only responsible person in handling warehouse management.

D. Match the Columns

	Risks		Further actions
1.	Fall from height	(a)	Proper handling procedure should be notified
2.	Movement from one place to another	(b)	Insurance should be there
3.	Manual handling	(c)	Should be aware
4.	Injuries from machine	(d)	Take proper information
5.	Death risk	(e)	Cautions should be displayed

E. Answer in Brief

1. Explain the types of risks in the binning process.
2. What are the different types of risks involved during binning process?

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A few warehousing hazards are illustrated in the figure below. In the following table, identify the hazards and place them in a Risk Assessment Zone.

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Can you find all the hazards?

G. Check your Performance

1. Demonstrate the types of risks in the binning process.
2. List out the physical risks in the binning process.
3. Demonstrate personal risks in the binning process.
4. Spell out the operational risks in the binning process.
5. Demonstrate the remedial steps.

Answer Key

Unit 1: Supply Chain, Logistics and Warehousing

Session 1: Introduction to Supply Chain

A. Fill in the Blanks

1. Retailers,
2. Outbound
3. Supply chain, linkage
4. Tactical
5. Operational
6. Bidirectional
7. Marketplace

B. Multiple Choice Questions

1. (a)
2. (b)
3. (c)
4. (a)

C. True or False

1. False
2. True
3. True
4. True
5. True

Session 2: Concepts of Logistics

A. Fill in the Blanks

1. Warehousing
2. Land
3. Storage
4. Cold Chain
5. Port terminal
6. Air Cargo
7. Liquid Logistics

B. Multiple Choice Questions

1. (d)
2. (c)
3. (c)
4. (d)
5. (d)

C. True or False

1. False
2. True
3. True
4. True
5. True
6. True

Session 3: Fundamentals of Warehousing

A. Fill in the Blanks

1. Warehousing, Warehouse
2. Specialised
3. Consolidation
4. Turnaround Time
5. Logistics.

B. True or False

1. True
2. False
3. True
4. True
5. False

C. Multiple Choice Questions

1. (d) 2. (a)
3. (d) 4. (a)
5. (d)

Session 4: Functions and Classifications of Warehouses

A. Fill in the Blanks

1. Refrigerated 2. Private Warehouse
3. Combination Warehouse 4. Finished Products
5. Manual, Automated.

B. Multiple Choice Questions

1. (d) 2. (d)
3. (b) 4. (b)
5. (a)

C. True or False

1. True 2. False
3. True 4. False
5. True

Unit 2: Storage of Goods

Session 1: Goods Stored in Warehouse

A. Fill in the Blanks

1. Perishable 2. Semi perishable
3. Product, 4. warehouse
5. MRO Inventory 6. Warehouse
7. Displayed 8. First Expire first out
9. Fragile

B. Match the Columns

1. (d) 2. (f)
3. (a) 4. (e)
5. (c) 6. (b)

C. True or False

1. True. 2. True
3. False 4. True
5. False

Session 2: Listing and Cross-checking of Inventory

A. Fill in the Blanks

1. Inventories 2. Work-in-process
3. Merchandise 4. Inventory
5. Retail Inventory

B. Match the Column

1. (c) 2. (a)
3. (h) 4. (b)
5. (d) 6. (g)
7. (f) 8. (e)

C. True or False

1. True 2. True
3. True 4. True
5. True

Session 3: Reporting to Supervisor

A. Fill in the Blanks

1. Lift 2. Document
3. Permanent record 4. Daily report
5. Dock

B. Match the Column

1. (d) 2. (a)
3. (c) 4. (e)
5. (b)

C. True or False

1. True 2. True
3. True 4. True
5. True 6. True

Session 4: Packaging of Products

A. Fill in the Blanks

1. Packing 2. Primary Packaging,
3. Secondary Packaging 4. transit packaging
5. Packaging.

B. Multiple Choice Questions

1. (b) 2. (b)
3. (d) 4. (c)
5. (a)

C. True or False

1. True 2. False 3. True
4. True 5. True 6. True

Unit 3: Bin Management

Session 1: Binning and Material Required

A. Fill in the Blanks

1. bin/store the items 2. coding 3. size, weight
4. stored and retrieved 5. re-packaging

B. Multiple Choice Questions

1. (d) 2. (a)
3. (d) 4. (c)
5. (d)

C. True or False

1. False 2. True
3. False 4. True
5. False.

D. Match the Column

1. (d) 2. (c)
3. (b) 4. (a)

Session 2: Storage System under Binning

A. Fill in the Blanks

1. Warehousing 2. Storage
3. Warehouse Storage 4. Free Movable Consumer Goods
5. FMCG

B. Multiple Choice Questions

1. (d) 2. (d)
3. (c) 4. (c)
5. (d)

C. True or False

1. False 2. False
3. False 4. False
5. True

Session 3: Labeling and Coding of Goods

A. Fill in the Blanks

1. Warehouse labels 2. manufacturers
3. labels 4. products
5. located

B. Multiple Choice Questions

1. (b) 2. (b)
3. (b) 4. (d)

C. True or False

1. True 2. False
3. True 4. True
5. True

D. Match the Column

1. (d) 2. (c)
3. (f) 4. (a)
5. (b) 6. (e)

Session 4: Manage the Warehouse and its Activities

A. Fill in the Blanks

1. WMS
2. RFID and Voice Recognition
3. Warehouses
4. Storage
5. SKU

B. Multiple Choice Questions

1. (c)
2. (d)
3. (b)
4. (b)

C. True or False

1. True
2. True
3. True
4. True
5. True

D. Match the Column

1. (d)
2. (f)
3. (e)
4. (c)
5. (a)
6. (b)

Unit 4: Methods and Procedures of Binning

Session 1: Binning Methods

A. Fill in the Blanks

1. ABC Methods
2. Just in Time
3. Fixed order, quantity
4. Two Bin methods
5. Three bin Methods

B. True or False

1. True
2. False
3. False
4. False
5. True

C. Match the Column

1. (c)
2. (a)
3. (d)
4. (b)
5. (e)

Session 2: Procedures of Binning

A. Fill in the Blanks

1. Binner,
2. Scanner
3. FIFO & FILO
4. Bin Card
5. Supervisor
6. Bay Area

B. True or False

1. True
2. False
3. False
4. True
5. True

Session 3: Storage of Goods and Documentation

A. Fill in the Blanks

1. 95
2. Account
3. Section 97
4. Comptroller
5. Right

B. True or False

1. (b)
2. (c)
3. (d)
4. (e)
5. (a)

Session 4: Risks Involved in Binning

A. Fill in the Blanks

1. Operational
2. Physical
3. Personal
4. Trained

B. True or False

1. False
2. False
3. True
4. False
5. False

C. Match the Column

1. (c)
2. (d)
3. (a)
4. (e)
5. (b)

Glossary

Abundance *The situation in which there is more than enough of something*

Accuracy *The fact of being exact or correct/ the ability to do something without making mistakes*

Acquire *Buy or obtain (an asset or object) for oneself.*

Adequate *Enough or satisfactory for a particular purpose:*

Aggregation *the formation of a number of things into a cluster*

Airmail *A system of transporting mail by aircraft, typically overseas.*

Aisle *A long narrow space between rows of shelves*

Automated Document Control *Information controlled with the help of software*

Bay *A broad inlet of the sea where the land curves inwards*

Bay area *Partly surrounded or marked space*

Bin Card *A card having an information of bins where items are kept*

Bulk *Something very large*

Clutter *A lot of objects in a state of being untidy*

Commercial Vehicle *A vehicle used for carrying goods or fare-paying passengers.*

Composition *The parts , substances, etc., that something is made of*

Comprehensive *Complete and including that is necessary*

Compression *To press something into a smaller space*

Demographics *Statistical data relating to the population and particular groups within it.*

Diagonal *A straight line that joins two opposite corners of a four sized flat shape, such as square.*

Dispatch *Send off to a destination or for a purpose.*

Disposal *Available to be used by someone.*

Dock *An area of water in a port that can be closed off and that is used for loading and unloading goods from ships or repairing ships*

E-logistics *E-logistics is automating logistics process.*

E-commerce *Commercial transactions conducted electronically on the Internet.*

Efficient *Achieving maximum productivity with minimum wasted effort or expense.*

Enhance *Intensify, increase, or further improve the quality, value, or extent a place on the coast where ships may moor in shelter.*

Equipment *The necessary items for a particular purpose.*

Ergonomics *The scientific study of people and their working conditions especially done to improve effectiveness.*

Expiry *The situation in which something which lasts for a fixed length of time comes to an end or stops being in use.*

Facilitate *To make something possible or easier.*

Heavy Vehicle *Goods carriage the gross vehicle weight.*

Hermetically *Tightly closed so that air cannot enter or escape.*

Hierarchy *A system in which people or things are arranged according to their importance:*

Hinterland *- "the land behind.*

Instead *As an alternative or substitute.*

Intends *Have (a course of action) as one's purpose or intention; plan*

Inventory *The counting of all the goods, materials, etc., kept in a place*

Inventory Discrepancies *Mismanagement in stock*

Liquid Logistics *Used extensively in the "supply chain for liquids*

Littering *To spread across an area or place untidily*

Manual *Done with the hand*

Manual Documentation *Documentation done with the help of pen and paper*

Moored *Make fast (a boat) by attaching it by cable or rope to the shore or to an anchor.*

Odour *A smell, often one that is unpleasant.*

Operation *Ready for use.*

Optimal *Extremely Good.*

Pedestrian *A person who is walking specially where vehicles can go.*

Penetration *The selling of a company's products in a particular market or area.*

Physical *Relating to the body.*

Pictorially *Of or relating to the art of painting and drawing pictures*

Precise *Exact and accurate.*

Rare **Not common; very unusual**

Reconcile *To find a way in which two situations or beliefs that are opposed to each other can agree and exist together.*

Refrigerated *Used to keep food or drink in a chilled condition.*

Retrieval *The act or process of getting something back, especially money or something that has been lost.*

Risk *A situation involving exposure to danger.*

Scarce *Not easy to find or get.*

Spare *If something is spare, it is available to use because it is extra.*

Spillages *A quantity of liquid that has spilled or been spilled*

Stack *A pile of things arranged one on top of another*

Surge *A sudden large increase, typically a temporary one*

Temperature *The degree or intensity of heat present in a substance or object*

Tropical *Designed for use in the tropics or in very hot weather (often used in combination)*

Utility *The usefulness of something especially in a practical way*

Visualisation *To form a picture of someone or something in mind in order to imagine or remember*

Report *A piece of information that is unsupported by firm evidence*

Wrong Shipments *Incorrect parcel*

Further Readings

BOOKS

Doing Business with India (GMB Publishing Ltd.)
Logistics Management (Pearson Education)
Logistics Management (S K Nandi/S L Ganapati)
Managing the Future Supply Chain, Prof. Dr. Dr. HC. Wolfgang Kertsen (EUL Verlag)
Warehouse Management, Michael ten Hompel (Springer)

MAGAZINES AND JOURNALS

Logistics Business Magazine
Indian Transport and Logistics News

WEB RESOURCES

- http://yourbusiness.azcentral.com/warehouse-staff-structure-28999.html
- https://www.washoeschools.net/cms/lib/NV01912265/Centricity/Domain/383/Warehouse%20Department%20Page/Warehouse_ORG_Chart_FY16.pdf
- https://www.scc-co.com/blog/bid/61041/Warehouse-Management-System-Bin-Location-Management
- http://www.eximguru.com/exim/guides/how-to-export/ch_15_packaging_and_labeling_of_goods.aspx
- http://yourbusiness.azcentral.com/warehouse-staff-structure-28999.html
- https://www.washoeschools.net/cms/lib/NV01912265/Centricity/Domain/383/Warehouse%20Department%20Page/Warehouse_ORG_Chart_FY16.pdf
- https://www.scc-co.com/blog/bid/61041/Warehouse-Management-System-Bin-Location-Management
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- https://www.scc-co.com/blog/bid/61041/Warehouse-Management-System-Bin-Location-Management
- http://www.eximguru.com/exim/guides/how-to-export/ch_15_packaging_and_labeling_of_goods.aspx
- file:///C:/Users/JITENDRA%20SHARMA/Desktop/PSSCIVE/August%202017/Embrace_Warehouse_Management_opt.pdf

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