CULINARY ART

LEVEL – I

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Acronym

TDF ……Temperature Danger Zone

TVET…….....Traning vocational educated teachers

TTLM……..Teaching, Traning ,Learing and Meathodes

WHOM……World health organsiation minster

Acknowledgment

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Introduction to the modules

In Culinary Art filed, transport and store food helps to take delivery of supply, to identify appropriate food transportation and to transport and store food safely and hygienically.

This module is designed to meet the industry requirement under the Culinary Art occupational standard, particularly for the unit of competency: **transport and store food.**

This module covers the units:

- Taking delivery of supplies
- Identifying appropriate food transportation
- Transporting food safely and hygienically
- Storing food safely and hygienically

Learning Objective of the Module

- Take delivery of supplies
- Identify appropriate food transportation
- Transport food safely and hygienically
- Store food safely and hygienically

Module Instruction

For effective use this modules trainees are expected to follow the following module instruction:

1. Read the information written in each unit
2. Accomplish the Self-checks at the end of each unit
3. Read the identified reference book for Examples and exercise

Unit one: Taking delivery of supplies

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Selecting tools and equipment
- Calibrating receiving areas and measuring units
- verifying all income supplies
- recording and reporting information of the supplier
- inspecting supplied items
- Managing stock

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Select tools and equipment
- Calibrate receiving areas and measuring units
- Verify all income supplies
- record and report information of the supplier
- inspect supplied items
- Manage stock

1.1. Selecting tools and equipment

Things to consider when planning to use and store tools

- Duration of use – are you likely to be pushing the tool past its limits?
- Storage – where will you store the tool when it's not in use, including during lunch breaks?
- Security – how will you keep the tools secure in the classroom at the end of lessons or if you're off site?
- Power and fuel requirements – will you need to get a generator or petrol?
- Maintenance and breakdowns – who's responsible for the upkeep of tools and what should you do if something breaks?
- Standards and regulations – are all the tools you're using safety checked and tagged (if required)?
- Potential to cause nuisance – can you mitigate (reduce) the risk to yourself and others if you're going to cause a lot of noise, dust or vibrations?
- Health and safety – do you have the required PPE to safely use the tools?
- Weather – is it too hot, cold, dry or wet to use it safely and without affecting its performance?

All trades and professions use tools of some description. Doctors use stethoscopes, butchers use knives, hairdressers use scissors – and all of those people use smart phones and computers.

A. Tool is the term that's usually used to describe the handheld devices or 'things' that help us to do our jobs. In the building and construction industries, tools are usually separated into 'hand tools' and 'power tools'.

Hand tools are things like: hammers, screwdrivers, brushes, trowels, wrenches, knives, crimpers, clamps etc.

Power tools are powered by cord, battery pack, petrol (or similar), hydraulic force or compressed air.

They are things like: mixers, saws, cutters, drills, grinders, nail guns, laser measurers, etc. Equipment

B. Equipment is a general term for gear that is not a 'tool' or 'machinery' and is used for a specific task or trade. In the environment, equipment might be a small or large set of 'things'

that you use to complete a project. Examples of equipment common across many of the building, construction and allied trades are:

- Tape measures
- Electric leads and residual-current devices
- Miter rulers
- Wheelbarrows
- Ladders
- Tarpaulins
- Levels (egg spirit or laser)

C. Machinery 'Machinery' is the heavy or larger tools that are needed to carry out work. 'Mobile machinery' (or 'portable machinery') can be carried for use on a job on-site. You may sometimes hear the term 'plant'. This refers to immovable equipment that stays in the workshop or factory but is referred to as 'fixed machinery'. Machinery is almost always unique to a trade

1.2. Calibrating receiving areas and measuring units.

1. 2.1 Calibration and verification of transport monitoring devices

- Calibration of transport temperature control devices Calibrate devices against a certified, traceable reference standard at least once a year, unless otherwise justified.
- Calibration of transport temperature monitoring devices Calibrate devices against a certified, traceable reference standard at least once a year, unless otherwise justified.
- Calibration of transport humidity monitoring devices Calibrate devices against a certified, traceable, reference standard at least once a year, unless otherwise justified.
- Verification of transport alarm equipment Check functionality of temperature and humidity alarms at the designated set points. Check functionality of security alarm systems. Carry out these checks at least once a year, unless otherwise justified. Maintain records to demonstrate compliance. Reason: To ensure they can be safely transported within the transport temperature profile defined for each product and that compliance can be demonstrated to the regulatory authorities and other interested parties
- Calibrating receiving areas, shelving units, transportation devices, labeling tools and materials, and thermometers

- Train individuals involved in any or all of the Child Nutrition Programs on using the procedures in this Standard Operating Procedure (SOP).
- Maintain the temperature of refrigerated, potentially hazardous foods at 41 ºF or below and maintain the temperature of hot, potentially hazardous foods at 135 ºF or above.
- Wash hands thoroughly before beginning procedure, when changing tasks, before putting on gloves, and before distributing any food.
- Sanitize surfaces where food will be prepared, distributed and consumed using an approved sanitizer and a clean rag or single use paper towel.
- Refer to cooking potentially hazardous food sop for proper cooking methods and temperatures.
- Maintain proper dry storage temperatures/condition requirements. Use food carriers for transporting foods.
    - ✓ Prepare the food carrier before use.
    - ✓ Ensure that all surfaces of the food carrier are clean and in good condition. Wash, rinse, and sanitize the interior surfaces.
    - ✓ Ensure that the food carrier is designed to maintain cold food temperatures at 41ºF or below and hot Food temperatures at 135ºF or above.
    - ✓ Place a calibrated stem thermometer in the warmest part of the carrier if used for transporting cold food, or the coolest part of the carrier if used for transporting hot food.
    - ✓ Refer to the Using and Calibrating Thermometers SOP.
    - ✓ Pre-heat or pre-chill the food carrier according to the manufacturer's recommendations.
    - ✓ Store food in containers suitable for transportation. Containers should be:
    - ✓ Rigid and sectioned so that foods do not mix.
    - ✓ Tightly closed to retain the proper food temperature.
    - ✓ Nonporous to avoid leakage.
    - ✓ Easy-to-clean or disposable**.**
    - ✓ Approved to hold food
- Place food containers in food carriers and transport the food in clean trucks, if applicable.

- Protect food from contamination by covering when delivering food to service station. Deliver food as quickly as possible.
- Discard potentially hazardous foods held in the danger zone for greater than four hours.
- Service station must be set up to protect from contamination during service.
- Refer to serving food sop for proper procedures to serve food

Verifying all incoming supplies

Kitchens need to order in a wide range of stock both food and non-food items.

When stock has been delivered there are numerous industry standard procedures as well as various organisational procedures that need to be followed to make sure that the goods that have been delivered are correct.

Checks need to be made to ensure that:

- The goods delivered were intended for you and not some other establishment
- All the goods ordered have in fact been delivered
- The goods supplied are of the quality ordered and required
- Food safety is maintained.

supplies can be seen to include:

Food – including dry goods, dairy products, meat, poultry, seafood, fruit and vegetables and frozen goods. This definition embraces raw materials as well as food items that are purchased in convenience form and pre-prepared form facilities must take all practicable measures to ensure they only receive food that is safe and suitable for human consumption. This means that they must make sure that the food they receive:

Is protected from contamination

- Check that food is covered or packaged when it arrives and that the packaging or covering is not damaged;
- Check the ‘best before’ or ‘use by’ date – if the ‘use by’ date has passed the food may have spoilt. Food cannot be used or sold past its ‘use by’ date;

- Make sure someone is at work to inspect the food when it arrives and to place it directly into the freezer or refrigerator or other appropriate storage area.

Can be identified while it is on the premises

- To do this we may want to use our supplier invoices, or keep some other record of our suppliers and what we buy from them and the food we have on our premises.

Is at the correct temperature when it arrives, if it is potentially hazardous

- if it is chilled – at a temperature of 5°C or below;
- if it is hot – at a temperature of 63°C or above;
- If it is frozen – frozen hard and not partly thawed.

Beverages – that are used by the kitchen.

This can include alcoholic beverages, juices and other beverages required in the preparation of menu items Utensils and equipment – required for the preparation, display and service of food

Cleaning materials and equipment – as required to meet the cleaning and sanitation requirements of the FSP for the property Linen – such as tea towels, serviettes, tablecloths and aprons

Stationery items – such as vouchers, tickets, pens, paper and relevant stock control and internal communication forms/documents.

1.4. Recording and reporting information of the supplier

All food items and food-related items that are delivered to you must be checked to ensure they meet your needs and do not pose a food safety risk.

This requirement must be standard operating procedure that applies over-and-above any FSP obligations to inspect and record, say, every 5th delivery

The basic questions to identify good suppliers are:

- ✓ **Will they sell the best products?**
- ✓ **Will they deliver most important orders?**
- ✓ **Are they honesty with their prices and the origin of the products?**

1.2.2 Temperature checking

Temperature of chilled or refrigerated food

It is a standard requirement that all chilled or refrigerated high risk food is to be kept at 5°C or below in order to keep it out of the Temperature Danger Zone(TDF) and maintain its safety. This means you need to check the temperature of high risk foods (such as meats, poultry, fish and seafood, dairy products, eggs, smallgoods or any items containing these items) to make sure they are at 5ºC or below.

Note that some FSPs allow chilled or refrigerated high risk food to be accepted if its temperature is 8°C or below providing it is immediately placed under refrigeration and used straight away.

Food regulations also allow you to accept chilled or refrigerated high risk food if the supplier can prove to you that the food has not been in the Temperature Danger Zone for longer than 2 hours.

Given that 'proof' of this can often simply be the word of the delivery driver it is best to reject food that has been delivered under these conditions.

Checks in relation to this area should include Physically inspecting the delivery vehicle on a regular basis to make sure it is clean and that chemicals aren't being carried with the food. Checking the first two deliveries from every new supplier – and then checking as indicated by your FSP (such as every one in five deliveries).

Temperature of frozen food

The temperature of frozen food should be -18°C or below. It is difficult to obtain a temperature reading of frozen food so the standard inspection is to make sure that the product appears 'hard frozen' meaning there are no signs of the product defrosting – the product is hard to the touch and there is no liquid.

Inserting a probe thermometer between frozen items is one way of obtaining a reading of frozen products. Where any frozen food has signs of thawing it should be rejected and entered into the appropriate record form or log – with high risk food this may indicate a food safety risk and with other foods it may compromise the quality of the product.

Temperature of hot food

Any premises accepting high risk hot food into their premises must ensure it is delivered at or above 60°C to be out of the Temperature Danger Zone.

Again, you may be able to accept hot food that is below 60°C if your FSP makes provision for this or if the delivery driver can convince you it has been in the Temperature Danger Zone for less than 2 hours.

The best advice is simply to reject food that fails to comply with this requirement; Cold, frozen or reheated foods or ingredients

1.2.3. Variations and discrepancies

- rejection of food that is likely to be contaminated, for example, it is at the incorrect temperature (food that is intended to be frozen but has thawed, or cold food that is in the temperature danger zone)
- packaged food that is exposed through damaged packaging
- incorrect quantities, amounts or weights
- Wrong product

1.3. Recoding supplied items

All food deliveries into the premises and all deliveries of food related items (such as single use items, packaging and wrapping) should not only be inspected on delivery but there is usually a requirement to record the delivery itself and the findings of the inspections that have been made on that delivery. Where a FSP is in operation this document will stipulate the procedures are obliged to follow when receiving food into the premises.

Record the delivery of all food items accepted in terms of:

- What was received?
- Who it was purchased from
- Quantities received.

FSP may have a document that is to be used for these purposes, or there may be an internal register or log that has to be completed.

Record any items that were refused identifying:

- What was rejected by description and quantity?
- Name of the supplier
- Reason for the rejection: which may be that refrigerated food was at too high a temperature (state the reading), wrapping was torn or that the food was mixed in with a delivery of chemicals.

1.3.1. FSP considerations

Most FSPs will have a minimum figure for the number of food deliveries for which evidence must be available to prove that those checks have been undertaken.

For example, it is a common requirement in many FSPs that the business must check and record details of 20% of all deliveries. However, where any problems with deliveries are identified, the action taken in terms of refusal, rejection or using a product first (see 'Temperature of chilled or refrigerated food' below) must be entered into either the 'Goods Rejected' form or the 'Corrective Action' form FSP.

Supplied items will record to inspect:

- Damage and breakages
- Quality
- Use-by dates

Damage and breakages

Check to make sure that:

- Outer are not ripped or torn
- Tins are not dented
- Packaging is not ripped
- Product has not been crushed
- Fragile items have not been broken or otherwise rendered unsuitable for use or presentation
- Product is not leaking
- There is no sound of broken glass when you move a carton containing jars or glass bottles.

Many of these damage-related issues can give rise for the need to refuse the item but in other cases common sense should be used to determine if the product can still be accepted without its safety having been compromised. Where consistent damage with products from a supplier is being identified they should be contacted and advised accordingly.

- **Quality**

Food authorities are not concerned with food quality, rather they are concerned with food safety so food quality is an in-house issue.

The point being that quality is relative to issues such as:

Intended use

Cost price-it may be prepared to accept a product that lacks the quality, normally received if it is priced appropriately or attractively

House standards and customer expectations – raw materials always need to be of a minimum quality that will enable the standards of the property in terms of food served, and customer expectations to be met but not all items will require the best quality raw materials in order to produce an acceptable final product

Urgency of need – where the kitchen is desperate for a product buyer may be prepared to accept it despite it being at 'normal' price and being sub-standard in terms of quality.

- **Use-by dates**

Foodstuffs often have use-by dates, best before dates or similar attached to them.

Part of the inspection process is to check these dates and use your knowledge of the usage rate for that item to determine if the time available to use that product is sufficient or not.

Any food that exceeds its use-by date must be discarded so it pays to give special attention to this aspect. Any food that is thrown out represents a total loss to the business and is to be avoided where possible.

If you believe the use-by dates etc are not sufficiently far enough into the future to allow you to use or sell the item, it should be rejected.

Always be alert to the possibility of a supplier trying to off-load onto you a product that has been returned to them by another operator as having too short a use-by date.

Ethiopian Food Standards Code

Standardization is a process of ensuring uniformity in products and services by use of appropriate standards. The process ensures efficient utilization of resources through reduction of wastes. Food and beverages standards are documents containing requirements, specifications, guidelines or characteristics that can be used consistently to ensure that food materials, products, processes and services produced are fit for human consumption. In any country, food and beverages standards are established by regulatory authorities and enforced by governments, food companies and retailers.

Product standards and code of practice assist manufacturers to produce commodities that meet minimum specifications for quality and safety.

Food law: Generally, Food Law may be divided in two parts: (1) a basic food act, and (2) regulations. The act itself sets out broad principles, while regulations contain detailed provisions governing the different categories of

Products coming under the jurisdiction of each set of regulations (Casella, A. 2001). Sometimes food standards, hygienic provisions, lists of food additives, chemical tolerances, and so on are included in basic food control law. For effective administration and enlightened compliance with the basic food law, detailed provisions are needed. In governments where there is a division between the responsibilities of the legislative and executive branches, the legislative branch enacts the basic law, while detailed regulations are elaborated and promulgated by the executive agency or agencies responsible for administering the law.

Food regulation : Food regulation, which subjects suppliers of goods and services to behavioral control and which penalize those who fail to perform in accordance with the specified standards are the dominant form of social regulation (Nadvi, K. and Walt ring, F. 2003). In the history of social regulation, food regulation also occupies a significant place. Since ancient time producers of food products have attempted to alter their wares in an effort to obtain dear prices for cheaper goods by adding water to wine and by skimming cream from milk.

1.5 Inspecting Supplied

All industries and businesses that deal with food and beverages must conduct a food safety inspection. It consists of standardized steps to remove health risk factors. Because of the thorough process, this inspection can be time-consuming and still poses risks from human error.

What is Food Safety Inspection?

Food safety inspection refers to a thorough inspection process to detect microbes, germs, and other unsafe elements from food. It is a standard procedure for all businesses and industries that deal with foods and drinks. Food safety inspection is a mandatory step everyone in the industry must do.

Important Elements in Food Safety Inspection

According to the World Health Organization, there are five key elements to perform during a food safety inspection. Here is the breakdown:

1. Cleanliness and Hygiene

Cleaning is the first step to perform in all food preparations. Dangerous microorganisms from water, soil, people, and animals can stick on ingredients, utensils, equipment, and hands. You can transfer them from one surface to the other, even with the smallest contact.

Important steps to take include:

- Washing hands and utensils before and after food preparation
- Washing hands after using the toilet or handling trash and raw meat
- Sanitizing all surfaces used for working and cooking
- Protecting the cooking area from sand, dust, animals, and pests

2. Separation between Raw and Cooked Ingredients

Raw ingredients like meat, poultry, and raw vegetables contain microorganisms. If you do not separate them from cooked ingredients, dangerous microorganisms can find their way to food and make everyone sick. This is known as “cross-contamination.”

Important steps to take include:

Separating raw ingredients from other products when shopping

- Using separate utensils and working surfaces when handling raw ingredients

- Storing foods within airtight containers and lids

3. Thorough Cooking

Thorough cooking, especially with a minimum temperature of 70 degrees Celsius, can eliminate most of the dangerous microorganisms. This applies to ingredients like poultry and meat, especially the ones cooked in large pieces.

Important steps to take include:

Bringing water and broth to boiling point and letting the heat on for an additional one minute

Using a thermometer to check the temperature of meat or poultry

Reheating food thoroughly and evenly

4. Keeping Food at Safe Temperatures

Proper food storage is also a key part of food safety inspection. Ideally, food should be stored at a temperature above 60 or below 5 degrees Celsius. When storing various food items in containers, label them with the food names and the dates of storing them. They will help you in managing safe food storage.

Important steps to take include:

- Refrigerating perishable foods at the recommended low temperature
- Serving food at hot temperature
- Not storing leftovers for more than three days in the fridge
- Letting the hot food cool down before storing it in the fridge

5. Using Raw Ingredients and Water Safely

Water, ice cubes, and raw ingredients can contain toxic chemicals and microorganisms. You must conduct proper food preparation to avoid getting sick or causing sickness.

Important steps to take include:

- Only using treated/safe water for cooking
- Bringing water to boil before making beverages or ice cubes
- Washing fruits and vegetables before consuming
- Using clean, filtered water to wash utensils and clean cooking station.

1.6. Managing excess stock

Staff responsible for receiving and storing stock may also be required to manage excess stock in accordance with relevant organisation policies and procedures.

Excess stock can also create storage problems in terms of not having enough suitable storage space for the items that have been delivered.

It can also lead to a situation where stock deteriorates by virtue of having been in storage for too long, or where the stock looks old because the newer items have a new look, new packaging, new formula or revised name.

Managing excess stock may require to:

a. **Monitor stock levels:** Stock levels need to be monitored to ensure the physical stock-on-hand does not exceed organisation limits. Many properties will set a numerical minimum, maximum and re-order stock level for items. The minimum stock level is the level below which stock under any circumstances must not fall. The maximum stock level is the most of any item that is to be in-store at any time. The re-order stock level is the stipulated level that stock must fall to, before a new stock order can be placed.

b. **Reduce stock levels**: When dealing with fresh and frozen food, there is NO return policy with most companies. Some may take back frozen foods if you have prior arrangements but this is difficult to arrange. Constant monitoring of levelsof fresh food stocks is vital. When ordering it is important to know what stock is 'on hand' in house. Computerised stock ordering and barcoding of products has made this easier to manage but not all enterprises can afford this systems as yet. Restaurants that have computerised ordring systems tend to have a barcode for the entire order rather than each item.

Practical methods of reducing excess stock levels include:

Returning excess stock to the supplier; in some cases (and this is definitely not the case in all instances), suppliers may be willing to accept stock back where you have been unable to sell it. Some suppliers will also accept stock back that is approaching its use-by date, or will arrange stock to be transferred to another establishment.

Organising in-house Specials; that will result in quickly moving surplus stock – these may include reduced pricing or special promotions.

Supplying stock that is in excess as a substitute for items that are ordered by departments this won't work all (or even most) of the time but can be an effective way of quitting stock from the stores area.

Talking to other venues; to see if they are willing to buy or swap items that will result in a mutual benefit. Always be aware of the need to monitor stock-on-hand.

Supplies can be seen to include:

Food – including dry goods, dairy products, meat, poultry, seafood, fruit and vegetables and frozen goods. This definition embraces raw materials as well as food items that are purchased in convenience form and pre-prepared form

Facilities must take all practicable measures to ensure they only receive food that is safe and suitable for human consumption. This means that they must make sure that the food they receive:

Is protected from contamination

- Check that food is covered or packaged when it arrives and that the packaging or covering is not damaged;
- Check the 'best before' or 'use by' date – if the 'use by' date has passed the food may have spoilt. Food cannot be used or sold past its 'use by' date;
- Make sure someone is at work to inspect the food when it arrives and to place it directly into the freezer or refrigerator or other appropriate storage area.

Can be identified while it is on the premises

- To do this we may want to use our supplier invoices, or keep some other record of our suppliers and what we buy from them and the food we have on our premises.

Is at the correct temperature when it arrives, if it is potentially hazardous

- if it is chilled – at a temperature of 5°C or below;
- if it is hot – at a temperature of 63°C or above;
- If it is frozen – frozen hard and not partly thawed.
- Beverages – that are used by the kitchen.

This can include alcoholic beverages, juices and other beverages required in the preparation of menu items;

Utensils and equipment – required for the preparation, display and service of food

Cleaning materials and equipment – as required to meet the cleaning and sanitation requirements of the FSP for the property

Linen – such as tea towels, serviettes, tablecloths and aprons

Stationery items – such as vouchers, tickets, pens, paper and relevant stock control and internal communication forms/documents. With regard to food aid handling and storage, there are seven key steps to observe.

These are: A good store must be selected and prepared Commodities must be received in good condition

- Intake must be orderly and recorded
- •Quality maintenance must be assesse
- Security against theft and loss must be provided
- Any loss incurred must be identifiable and account
- The end-use requirements must be met.

Food aid staff must be fully conversant with the relevant warehouse technical procedures and management practices in order to assess whether they are being implemented satisfactorily, and to offer adequate support if necessary.

Self Check -1	Written Test_1

Name……Id No……Time Allowed……

Part I. True or False (each 2 point)

---------1.Kitchens need to order in a wide range of stock both food and non-food items.

--------2.It is important to check All the goods ordered when it have been received

--------3.Facilities must take all practicable measures to ensure they only receive food that is safe and suitable for human consumption

------- 4. Food receiver when it receives purchased food he has to check package.

…….5. Returning excess stocks to the supplier one the methods of reducing excess stock levels.

…… 6. Monitering stock level used to manage stock level.

Instructions: Answer the following questions. Write your answers in the answer sheet provided:

1. What should be the containers suitable for transportation?
1. At what temperature the refrigerated, potentially hazardous foods maintained? (2 points)
2. Supplied items will record to inspect what? List down. (4%)
3. Record the delivery of all food items accepted in terms of what? List down. (6%)

Answers (Hint)

1. A) Rigid and sectioned so that foods do not mix.

B) Tightly closed to retain the proper food temperature.

C) Nonporous to avoid leakage.

D) Easy-to-clean or disposable.

E) Approved to hold food

Unit Two .Identify Appropriate Food

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Selecting suitable food transportation vehicles.
- Ensuring food safety for transport and storage.

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Select suitable food transportation vehicles according to legislative requirements
- Ensure food safety during transport and storage.

Overview of food safety and hygiene procedures

Food safety and hygiene procedures are critical to ensure that the food served to customers is safe to eat. Various legislation and regulations exist to ensure this happens across all hospitality businesses, and that procedures are in place to see that they are properly enforced and maintained.

Food safety legislation includes key requirements that businesses must implement to ensure effective compliance. These requirements include the following: All staff is in receipt of relevant, regular and accurate food safety and health. All staff practice and demonstrate a high standard of personal safety and hygiene. For example, this includes regular and appropriate hand washing, for instance, between dealing with raw and cooked foods and after going to the toilet, and using oven gloves when picking up hot pans.

Staff must comply with legislation and regulations governing the organization. Staff must follow and comply with organizational policies written in accordance with such legislation. Do not transport food and non-food items

2.1 Select suitable food transportation vehicles according to legislative requirements

Food transporting vehicles should be solely used for transportation activities other than transporting chemicals and non-food items. When food and non-food items are transported together there is a high degree of cross contamination. Food transportation should embody:

- Use clean and sanitized transporting vehicles
- Pack food items to be transport together
- Do not use food transporting trailers to transport non-food items

2.2 Ensuring food safety during transporting and storage

Food safety is a scientific discipline describing handling, preparation, and storage in ways that prevent food borne illness. This includes a number of routines that should be followed to avoid potentially severe health hazards.

Food can transmit disease from person to person as well as serve as a growth medium for bacteria that can cause food poisoning. In developed countries there are intricate standards for food preparation, whereas in lesser developed countries the main issue is simply the availability of adequate safe water, which is usually a critical item. In theory, food poisoning is 100% preventable. The five key principles of food hygiene, according to WHOM, are:

- ✓ Prevent contaminating food with pathogens spreading from people, pets, and pests.
- ✓ Separate raw and cooked foods to prevent contaminating the cooked foods.
- ✓ Cook foods for the appropriate length of time and at the appropriate temperature to kill pathogens.
- ✓ Store food at the proper temperature.
- ✓ Do use safe water and cooked materials.

2.2.1 Perform the importance of food safety to hotels

Whether the business is a restaurant, a school or a hotel, food safety regulations must be followed by each to ensure that customers are consuming food that is prepared in safe conditions, and is thoroughly cooked to prevent food poisoning. Many hotels practice such intense food safety procedures that even cleaning maids and maintenance personnel are required to be trained in food safety regulations such as:-

- **Personal Hygiene**

One of the most important food safety regulations in the hotel food industry deals with personal hygiene. All persons in the hotel who will be touching food items or items that will touch the food are required to wash their hands after using the rest room. Personal hygiene as a food safety regulation in hotels does not only govern hand washing but also the covering of hair and cuts on the body, wearing clean clothing to work, and covering the mouth and nose when sneezing or coughing and then washing the hands again.

- **Cleaning and Disinfection**

Cleaning and disinfecting food preparation areas and items used in preparing food are very important to the food safety standards of a hotel. Items, such as preparation tables, stoves, ovens, knives, stirring utensils, grinding machines and juicing machines, all must be cleaned and disinfected to prevent bacteria from growing in or on the items and potentially causing food poisoning.

- **Pest Control**

Making food safe in hotels does not simply mean using cleanliness when handling food or objects that will come into contact with the food. Food pests, such as cockroaches, flies and rodents, can contaminate any foods. Annual or more frequent visits from pest control services will help to prevent such problems and keep the food service sector of the hotel at top quality.

a. Food Preparation

The cooks preparing the food must learn the proper means of preparing dishes. They are required to throw away any expired foods, even if they are only a day past expiration date, and any foods that touch the floor or come into contact with a dirty surface. Cooks are also required to cook food thoroughly unless otherwise directed by the person who is requesting the food item

b. Inspection

The health department of the county in which the hotel is seated reserves the right to make surprise visits to the hotel or other food service business in order to ensure that the hotel staff is observing proper food safety procedures.

GENERAL **CONCEPT OF FOOD HYGINE**

The term "food hygiene" is used to describe the preservation and preparation of foods in a manner that ensures the food is safe for human consumption. This term typically refers to these practices at an individual or family level, whereas the term "food sanitation" usually refers to these types of procedures at the commercial level within the food industry, such as during production and packaging or at stores or restaurants. Food hygiene in the home kitchen includes things such as the proper storage of food before use, washing one's hands before handling food, maintaining a clean environment when preparing food and making sure that all serving dishes are clean and free of contaminants

Food is a potential source of infection. It is liable for contamination by micro-organisms; at any point during its journey from the producer to the consumer the mail danger from contamination arise from handling distribution and serving of foods. Food hygiene, in its widest sense implies hygiene in the production, handling, distribution and serving of all types of food.

i. Milk Hygiene

Milk is an efficient vehicle for a great variety of disease agents. The sources of infection of milk may be

(i) the dairy of animal
(ii) the human handler or
(iii) the environment, e.g. contaminated vessels, polluted water, flies, dust etc. But for the production of clean and safe milk the following factors should be taken in to consideration.

- Animal must be healthy and clean
- Premises where the animal is housed and milked must be hygienic
- The milk vessels must be sterile and kept covered.
- The water supply must be safe
- Milk handler must be free from communicable diseases

  Milers must wash their hands and arms before milking
- The distribution of milk must be done under hygienic condition

Much of the milk produced should be treated by boiling but it has some bad effects as it alters the taste of the milk and impairs the food values considerably by destructing vitamins, enzymes and some useful bacteria and alteration of proteins, fats, milk, sugar and salts.

ii. Meat Hygiene

The term meat includes various tissues of animal origin. The diseases which may be transmitted by eating unwholesome meat are: Tape worm integrations and Bacterial infestations causing anthrax, tuberculosis, and food poisoning.

The characteristics of good meat are that it should not be pale, pink or a deep purple tint, firm and elastic to touch, should not be slimy and have an agreeable odor.

Slaughter houses are the places where animals, whose flesh is intended for human consumption, are killed. The hygiene of the slaughter house is of paramount importance to prevent the contamination of meat during the process of dressing preferably the slaughter houses should be away from the residential areas and there must be provision for the disposal of wastes, proper water supply, examination of animals, storage of meat, transportation of meat etc.

iii. Fish Hygiene

Fish loses its freshness because of the bacteria with which they become infected. The signs of fresh fish are the stiffness, the bright red gills and the clear and prominent eyes Fish is the intermediate host of the tape worm. Fish obtained from sewage polluted waters may be infected with cholera and typhoid bacilli. Consumption of certain fish may sometimes give rise to fish poisoning.

iv. Fruits and Vegetables

Fruits and vegetables constitute another important source for the spread of harmful organisms these infections are a serious menace to public health where sewage is used for growing vegetables. The vegetables which are consumed raw in the form of salads, pose a problem in food sanitation. People should be educated to wash the vegetables before eating them raw. Vegetables which are cooked and eaten are free from this danger.

v. Sanitation of Kitchen

Sanitation of Kitchen and eating establishment are a challenging problem in food sanitation. These should not be near any accumulation of filth or open drain, droppings or dung and other sources of nuisances the floor of the kitchen should be smooth and easy to keep clean. The doors and windows should be rat-fly- proof, and of the self-closing type, there should be provision for ample natural lighting facilities aided by proper ventilation

vi. Preservation of Foods

Generally food is preserved by freezing or by using currents of cold air. Cold storage is used for the preservation of foodstuffs and their conveyance from one place to another.

Food may also be preserved in ice, alcohol vinegar and by other substances, drying is sometimes adopted to, as in the case of fish, vegetables and fruits. By the method of dehydration, vegetable

can be preserved in a very small space for a long time and can be used for cooking by merely soaking in water for a while.

Foods like milk, fish, fruit and jams are also preserved in tins or bottles by proper sealing after all the air has been expelled by heat. Badly preserved foods are not good for health,

vii. Adulteration of Foods

Adulteration of food consists of a large number of practices such as mixing, substitution, abstraction, concealing the quality, putting up decomposed foods for sale, misbranding and addition of poisons. The types of adulteration commonly found in the various foodstuffs are as follows:

- Removal of fat and addition of water to milk products are common type of milk adulteration
- Ghee is adulterated with vegetable oils and animal fat
- Rice and wheat are mixed with stone chips and gravel to increase bulk
- Wheat flour is mixed with stone powder and thesauri dhal and pea flour
- Tea leaves are adulterated with old tea leaves, leather and saw dust

Methods of Cooking

Food may be boiled, steamed, roasted, and fried. The method of cooking food should be varied as much as possible; otherwise it will lose its result. Every attention should be paid to cleanliness. Cooking vessels made of aluminum are to be preferred to those made of copper. Rice and other starch foods should be cooked slowly and green vegetables quickly with proper covering. Well-cooked rice is soft and free from lumps. Should be very carefully husked and then cooked; otherwise it will cause irritation of the bowels. Separate room should be provided for storage of cooked foods. Water supply should be adequate continuous and safe. Cleaning of utensils and crockery should be done in hot ' water and followed by disinfection.

Food Handlers

Food sanitation rests directly upon the state of personal hygiene and habits of the personnel working in the food establishments. Education of food handlers in matters of personal hygiene, food handling, utensil and dish washing is the best means of promoting food hygiene.

The hands should be cleaned at all times. Hands should be scrubbed and washed with soap and water immediately after visiting a lavatory. Finger should be kept trimmed and free from dirt.

Head covering should be provided to prevent loose hairs obtaining entrance to foodstuffs. Coughing and sneezing in the vicinity of food and smoking on food premises should be avoided.

Food safety hazards

A food safety hazard is a biological, chemical or physical agent, or condition of food, with the potential to cause harm or an adverse health effect when the food is eaten. Food safety hazards can be classed as:

- Biological such as microorganisms
- Chemical such as chemicals, pesticides, cleaning agents and allergens
- Physical foreign objects that are not supposed to be in the food, such as timber, glass, packaging

Any business should aim to reduce the risk of these hazards in its food processing and service, ensuring the food is safe to consume. A food safety program outlines the systems in place to keep food safe and procedures which reduce the risk of the hazards which may occur in the food production and service business.

Physical hazards

- Physical hazards which can be found in food include:
- Objects naturally present in the food (animal hair, bone chips, leaves, etc)
- Objects occurring in agriculture (dirt, manure, leaves, etc)
- Objects added during processing (glass, plastic, hair, metal, etc).

Reducing physical hazards is relatively simple in most hospitality businesses as they are physically visible in the food. They are normally controlled by procedures such as a visual inspection of food and good kitchen procedures such as a no wood or no glass policy, and keeping the food covered

Chemical hazards

Chemical hazards which can be found in food include:

- Naturally occurring poisonous chemicals (poison plants such as rhubarb leaves and mushrooms,
- poisonous animals such as puffer fish, algal blooms, mould toxins, etc)
- Chemicals added via water.
- Agricultural chemicals from soils, plants and animals (pesticides, antibiotics, dips, heavy metals, etc).
- Chemicals added during food processing (additives, cleaners, etc).

Some people have an allergic reaction to certain ingredients or parts of food. Common allergens include:

- soybeans and their products
- sesame
- cereals containing gluten
- milk and milk products
- sulphites
- egg and egg products peanuts and their products
- fish and fish products

Chemical hazards in foods can be controlled by:

- Purchasing from an approved supplier
- Covering food and protecting it from contamination.
- Having an allergen awareness, and strategies to prevent cross contamination from allergens.

- Separate chemical storage area, away from food.
- Use of food safe chemicals within the food preparation areas.

Biological hazards

Hazards which live within food can occur from multiple sources. These microorganisms (commonly called "germs") are so small they can only be seen under a microscope. Not all microorganisms are harmful to humans. Pathogens are the microorganisms which cause harm to humans, when they reach a high level in food. Some examples are:

- Bacteria e.g. salmonella, staphylococcus aureus, bacillus cereus
- Viruses e.g. hepatitis A, influenza
- Yeasts
- Molds
- Protozoa e.g. Guardia

Most food poisoning illness is a result of these microorganisms growing in food. When food is in moist, warm conditions, they multiply to an "infective dose" which makes a person ill.

Most food poisoning occurs due to the continued growth to dangerous levels of microorganisms, particularly bacteria, in food. Food handlers should know about food poisoning bacteria and the conditions they require for growth, to ensure food borne illness is avoided.

It is important to be aware of the different types of food safety hazards which may pose a significant risk to the safety of your customers. Situations when food safety hazards are likely to pose a significant risk are:

- Handling "potentially hazardous foods" which are susceptible to microorganisms' contamination and

  Growth. These are low acid, high protein foods such as meat, eggs, poultry, and seafood and dairy items.
- Handling raw food and fresh foods.
- Handling food with your hands, rather than using equipment
- Cooking food - food needs to be cooked thoroughly to kill microorganisms

- Chilling food - food needs to be chilled quickly to reduce the growth of microorganisms
- Defrosting foods
- Reheating foods
- Displaying food on buffets or self service
- Preparing food in temperatures in which microorganisms grow rapidly (5°C- 60°C)

Food safety procedures aim to prevent hazards in food, such as stock receipt and stock rotation, food storage, temperature control. Further information can be found in the section ***food safety procedures.***

There are also programs to support the safety of food being prepared and served, such as pest control, waste disposal and staff hygiene. More detail can be found by clicking on the link support programs.

Food safety procedures

All businesses must actively work to promote good personal hygiene of staff and implement everyday work procedures which prevent the growth of microorganisms and limit the opportunity for cross contamination The objective of this manual is to precisely train the involved in the business of storage and transportation of food products on ways and means to identify and address the hazards in their system so that risks of contamination is eliminated or reduced and the food thus stored and distributed remains safe for consumption.

A food safety program based on identifying and analyzing the food safety hazards which exist in a food service operation, and implementing a simple set of policies and procedures to be followed by a food handlers, can be done by following the six steps below.

A food safety program for each business must follow a systematic documented manner:

- Identify the potential food safety hazards
- Identify the means of control of the hazards
- Monitor the hazards
- Provide for corrective action
- Regularly review the program

- Keep appropriate records. :

CONTROL OF FOOD HAZARDS;.

i. identify any steps in their operations which are critical to the safety of food

ii. Implement effective control procedures at those steps;

iii. Monitor control procedures to ensure their continuing effectiveness; and

iv. Review control procedures periodically, and whenever the operations change

Critical control points

Each business must put in place procedures at the "critical control points" or the stages in processing or preparation of food, where there is a high risk of contamination or food spoilage. Common critical control points for hospitality businesses are:

- Purchasing and delivery
- Stock control and food storage
- Preparation
- Cooking
- Cooling
- Reheating
- Holding or display
- Service

Each business needs to identify the critical control points which are relevant to their business and operation.

A. Purchasing and delivery

- Use only reputable or approved suppliers. Ask for evidence of the supplier's food safety program or HACCP certificate.
- Deliveries of food supplies should be made at a convenient time for correct checking and storage procedures to be followed.
- Check the temperature of all perishable, potentially hazardous and frozen foods and record the temperature.
- Check use-by dates.
- Check for any damage or opening to packaging or produce.

- Check for “freezer burn” or visible icicles inside frozen food wrapping.
- Reject the delivery if the delivery does not meet the temperature requirements
- (<5°C for cold food and -18°C for frozen food), if the food is out of date, or if there is any variation in normal color, texture, odor or general appearance.

B. Stock control and food storage

- Store food immediately and at the correct temperature
- Cover food and make sure it is clearly labeled and dated.
- Never store food on the floor.
- Separate raw and cooked foods.
- Rotate stock on a first in first out (FIFO) basis.
- Do not store food near chemicals.
- Keep storage areas clean and dry.
- Check storage areas daily for pests and cleanliness.
- Check and record temperature of cold food storage areas; cool rooms, bench fridges, display

C. Preparation

- Always wash hands before commencing any preparation and between raw and cooked foods.
- Prepare raw and cooked foods separately and use separate chopping boards and knives.

- Thoroughly wash all fruit and vegetables in clean water before use, to remove soil, insects and any chemical residues.
- Use clean and sanitized equipment.
- Avoid cross contamination. Cooking destroys most harmful bacteria however cooked foods can be re-contaminated by allowing the transfer of bacteria from raw to cooked food. This can occur with hands, utensils, equipment or surfaces such as benches and cutting boards.

- When preparing food, limit the time high-risk foods such as animal products are in the danger zone. This

  Should be less than one hour preparation time for high risk foods.

- Fingers should not be used to taste food.
- A tasting spoon should be used and washed after each tasting.
- Thaw foods in a refrigerator, cool room or in the microwave.

D. Cooking

- Cook foods above 75°C.
- Chicken and pork cuts must be thoroughly cooked, so that the center is no longer pink. Using a meat thermometer is a good idea when roasting meats.
- Record the temperature of potentially hazardous foods when they are cooked.

E. Cooling

- Potentially hazardous food need to be cooled after cooking as quickly as possible.
- Hot food needs to be chilled to below 5°C as quickly as possible.
- Placing hot food straight into the cool room or freezer is not advisable as it raises the temperature of these storage areas placing the food into the danger zone.

- Small portions and shallow containers cool food quickly.
- Transfer hot foods into smaller shallow containers.

- Stir food to decrease temperatures.
- Cool the food container in some ice or cold water.

F. Reheating

- Potentially hazardous food needs to be reheated as quickly as possible
- Do not reheat food in a bain-marie or other hot holding equipment, as the temperature is not sufficient to reheat the food quickly.
- Reheat potentially hazardous food once only.
- Reheat food to above 75°C.

G. Holding or display

- Be sure that the bain-marie is above 60°C before filling with food.
- Food must be ‘HOT’ when it is placed into the heated container (cooked or reheated to 75°C).

- Hot food must remain over 60°C throughout the service period.

- Cold food must be displayed or held at temperatures <5°C.
- Check temperature with thermometer.
- Stir foods to keep even distribution of heat.
- Use separate serving/ladle utensils for each container of food.
- Unwrapped or unpackaged food which is to be displayed on a counter, must be covered at all times, or

- Protected so customers cannot touch or cough on the food.
- Raw food and ready to eat food must be separated (e.g. by using plastic partitions).
- Discard any unused food, potentially contaminated food, or food that there is any variation in
- Normal color, texture, odor or general appearance.

H. Service

- Food is to be served with utensils only.
- Foods which are to be held hot for service must not be allowed to fall below 60°c
- Foods which are to be served cold must be kept refrigerated at <5°c until serving time.
- Single use, disposable, take away food and drink containers, lids, and drinking straws must be kept in hygienic, covered receptacles until used.

Food safety monitoring

Each hospitality business must monitor the food safety hazards and controls in place at the critical control points. Different ways of monitoring or checking food safety hazards may be:

- Check Check and record food temperature using a thermometer probe
- and record the food deliveries at receipt
- Check and record the use by date or preparation date
- Check and record the temperature of cold storage equipment such as fridges, cool rooms, display cabinets and freezers.
- Check and record the temperature of hot food storage equipment such as bin maries, warming cabinets
- Check and record the cooking temperature
- Check and record the time and temperature when chilling food

- Check for bacterial growth using bacterial swabs and tests
- Chemical tests

Corrective actions

Each hospitality business must take corrective actions if the food hazards are found not to be under control, or the food poses a risk of harm if eaten.

When checking and monitoring food safety, staff need to take action if there is a procedure not followed, or the critical control points are breached, or they feel that there is an incident that may pose a food safety hazard The corrective action should either remedy the food safety hazard or prevent the food from being consumed.

All corrective actions must be written down in a record book. Examples of some common corrective actions are:

- rejection of deliveries
- disposal of out of date food
- disposal of food items which are not able to be identified
- organizing equipment repairs or service
- organizing pest control services
- Reporting incidents to management.

Some examples of incidents where there are indications of a possible food hazard and where corrective actions may be required are:

- customer complaints
- out of date food
- spoilt, unattractive food
- unclean equipment
- physical objects found in food

2.2 2 Common Hazards in Storage, Distribution and Transportation of foods

Following are the specific problem areas where food may be at risk for physical, chemical, or biological contamination during food storage and transportation:

- Improper refrigeration or temperature control of relevant food products in storage or

during transportation (temperature abuse).

- Improper management of transportation units or storage facilities to preclude cross-contamination, including Improper sanitation, backhauling hazardous materials, not maintaining tanker wash records, improper disposal of wastewater, and aluminum phosphide fumigation methods in railcar transit;
- Improper packing of transportation units or storage facilities used during transport, including incorrect use of packing materials and poor pallet quality; Improper loading practices, conditions or equipment, including improper sanitation of loading equipment, not using dedicated units where appropriate, inappropriate loading patterns, and transporting mixed loads that increase the risk for cross-contamination;
- Improper unloading practices, conditions, or equipment, including improper sanitation of equipment and leaving raw materials on loading docks after hours;
- Poor pest control in transportation units or storage facilities;
- Lack of employee training and/or supervisor/manager/owner/ driver knowledge of food safety and/or security;
- Poor storage and transportation unit design and construction;
- Inadequate preventive maintenance for storage facilities and transportation units resulting in roof leaks, gaps in doors, and dripping condensation or ice accumulations;
- Poor employee hygiene
- Inadequate policies for the safe and/or secure storage and transport of foods, e.g., lack of or improper use of security seals;
- Improper handling and tracking of rejected loads and salvaged, reworked, and returned products or products destined for disposal; and
- Improper holding practices for food products awaiting shipment or inspection, including unattended product, delayed holding of product, shipping of product while in quarantine, and poor rotation and through put.

Utilities and Waste Management

i. Waste disposal shall be managed in accordance with legal requirements and to prevent accumulation, risk of contamination and the attraction of pests.

ii. Food products intended to be supplied for animal feed shall be segregated from waste and managed in accordance with the relevant regulatory requirements.

iii. External waste collection containers and rooms housing waste facilities shall be managed to minimize risk.

iv. Must remove food waste and other rubbish from rooms where food is present as quickly as possible, to avoid them building up.

v. Must put food waste and other rubbish in containers that can be closed, unless you can satisfy

vi. Your local authority that other types of containers or systems of disposing of waste are appropriate.

vii. These containers must be of appropriate construction, kept in sound condition, be easy to clean and, where necessary, to disinfect.

viii. Must have adequate facilities for storing and disposing of food waste and other rubbish. viii. Stores for waste must be designed and managed in a way that enables them to be kept clean and, where necessary, free of animals and pests.

ix. Must get rid of all waste in a hygienic and environment friendly way, in accordance with legislation. (There are rules about the way certain types of food waste must be collected and disposed of – follow the regulations laid down by local authorities.

x. The waste must not be a direct or indirect source of contamination (e.g. touching surfaces that food is prepared on, or attracting pest

Self Check -2	Written Test_2

Name …… .Id No……..Time Allowed….

Directions: Answer all the questions listed below.

1. Discuss possible hazards that may occur in a premise? (2 points)
2. Describe about microorganisms briefly (3 points)
3. How to transport Food item properly (5 points)
4. How to protect Food spoilage (2 points)
5. Write the HACP principles(5

Answers (Hint.)

1. In any premises there might occur physical, chemical or biological agent in a food that can potentially create food hazards.
2. Micro-organisms are either single celled or multi-cellular organisms that result in spoilage, infection or intoxication of food items if they have pathogenic characteristics.
3. Use industry best practices in order to implement food safety during transportation
    - Use clean transporting trailers
    - Do not transport food and non-food items together
    - Apply proper loading and unloading procedures
    - Avoid cross contamination through proper wrapping and packaging
4. How to protect Food spoilage
    - Maintain personal hygiene
    - Proper storage of food
    - Do not store raw and cooked foods
    - Clean and sanitize preparing and cooking utensils
    - Avoid cross contamination of food
5. Write the HACP principles
    - Conduct a hazard analysis
    - Determine CCP
    - Establish control limit
    - Establishing system to control the CCP

Unit Three- Transporting Food Safely and Hygienically

This learning guide is developed to provide you the necessary information an regarding the Unit following content coverage and topics:

- Selecting Packaging, loading, restraining and unloading food
- Maintaining accurate records of food transportation

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Select Packaging, loading, restraining and unloading food

  Maintain accurate records of food transportation

3.1. Selecting Packaging, loading, restraining and unloading food

- **Packaging**

Food Packaging is one of the most important processes in food industry which helps in maintaining the quality of food products during storage, transportation and distribution. The food packaging industry has revolutionized to a great extent in the recent years with advancement of novel food packaging technologies, such as active packaging, aseptic packaging, smart packaging, bioactive packaging, edible packaging which are research trends. Packaging is generally done as a final process where packed goods/products are further packaged into bigger boxes, courier bags, bubble envelopes, cardboard, cartons or whatsoever. However, both the term packing and packaging are commonly used interchangeably.

Types of packaging

1. Primary packaging
2. Secondary packaging
3. Tertiary packaging

Primary packaging is the material which comes in direct contact with the contents packed. It covers the product and holds it. This is usually the smallest unit of distribution or use. Example: Chips packet.

Secondary packaging is the material present outside the primary packaging. It is also used to group primary packages together. Example: Paperboard cartons of breakfast cereals (like Cornflakes), cartons or trays of beverage cans.

Tertiary packaging is the material which holds secondary packages. It is used for bulk packaging in order to ease handling, transportation, distribution, shipping or storage. Example: Wooden crates, cardboard cartons, etc.

In retail, restaurant and end use product distribution, the risk of microbial contamination from the trailer may be minimized by following leading practices that reduce contamination since products are contained in packaging and are not in direct contact with the trailer.

Different concerns exist with bulk transportation as most all products is raw and in direct contact with the trailer increasing the risk of contamination.

The risk of cross contamination of packaged food and nonfood products may be minimized by current industry best practices.

- **Loading and Unloading Hazards**

Loading and unloading operations are common in industries such as logistics and transport. To prevent injuries among workers carrying out these operations, proper securing and safe loading and unloading practices are crucial.

Some common hazards related to loading and unloading from vehicles include:

- Toppling of improperly stacked or secured cargo;
- Breaking or failure of lashing and dunnage equipment;
- Unsafe access to and egress from the lorry or trailer bed; and
- Falling off the loading platform.

- **Safe Loading and Unloading**

In general, loading and unloading operations should be carried out at designated areas as much as possible. All personnel involved must adhere to work instructions given by the person in charge of the operation.

Loading
- Don't overload the vehicle.
- Stack lighter loads on top of heavier loads.
- Spread the loads out evenly for balanced weight distribution.
- Secure and lash the loads properly.
- Ensure that the stacking arrangement is stable.

Unloading
- Ensure that the loads have not shifted during transportation before unloading.
- Ensure that all equipment used for unloading are in good working condition.
- Perform unloading on flat and firm ground

a.**Temperature Control**

It’s a common industry practice to have quality control processes in place to check and inspect the temperature of products during shipping, unloading and loading activities.

One such common practice is that companies check temperatures of fresh, temperature-sensitive products when making backhaul pick-ups and receiving product.

Other common practice is for receiving firms to implement policies to have 3rd party distributors record product temperatures en route to their distribution center.

- Current Industry Practices for Cleaning Vehicles
- Trailers are frequently swept throughout the day to remove any debris.
- Spills and odors are addressed promptly and thoroughly when identified through inspection.
- Inspection, verification and documentation are integral part of most food safety plans.
- Retailers, wholesalers and distributors should have effective methods which meet the needs of their individual supply chain systems. Most non-bulk foods being transported by the industry are enclosed in packaging and do not come into direct
- Contact with trailer surfaces.
- A review of your trailer cleaning program may be needed to determine if your current program meets the act.

Segregation of foods/non-foods

Current industry practices indicate foods may be transported simultaneously and sequentially with nonfood products with minimal risk.

By using a leading practice that segregates food and non-foods on the same trailer the potential risk of cross-contamination from nonfood may be minimized.

By implementing a leading practice it may minimize excessive wear and tear on trucks, reduce man-hours and reduce gas emissions and consumption

3.2 Maintaining accurate records of food transportation

Food Transporting

Shipping containers Container selection generally Select shipping containers that:

Comply with applicable national and international standards relevant to the product type and the chosen transport route and mode

Protect personnel and the general public from hazards arising from spillage, leakage or excessive internal pressure

Protect the product being transported against mechanical damage and the anticipated ambient temperature range that will be encountered in transit Can be closed in a manner that allows the recipient of the consignment to establish that the product has not been tampered with during transport. Explain transporting variety food for picture by cars;



Figure 3:1 variety food items transporting

Documented sanitation standard operating procedures (SSOPs) shall be in place and maintained for the building, infrastructure, and all equipment within the facility. Facility deep cleaning (such as overheads and other infrastructure) shall be based on risk assessment and the frequency documented on the master sanitation schedule. The facility cleaning frequency shall be compliant with the maximum established run length or applicable regulatory standards. Wet and dry cleaning activities shall be segregated to protect areas from cross contamination to production. Following any wet cleaning activities, the area shall be returned to dry conditions before start of production. Equipment that is cleaned with dry steam shall be followed by a

sanitizer/disinfectant step food spillages are addressed immediately to prevent potential contamination of food contact surfaces or equipment

Self Check -3	Written Test_3

Name……Id No…… Time Allowed…….

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is the importance of segregation of food and non-food items?
2. What is SFTA? (5 points)
3. Why should we need to control the temperature of food during transportation?
4. Why food should needs to be packed during transportation?

Answers (Hint.)

1. Food and non-food items should be segregated during transportation in order to eliminate cross contamination that can be sourced from the non-food items
2. SFTA is Safe Food Transporting Act, which is used to ensure food safety during transportation.
3. Temperature is an important factor for pathogens to grow and produce food in food. So in order to prevent food intoxication and infection temperature should be controlled.
4. Packing is important to avoid cross contamination of food.

Unit Four: Storing food safely and hygienically

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Selecting food storage conditions appropriate to specific food types
- Maintaining appropriate environmental conditions
- Keeping storage areas free from contaminants and pests

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Select food storage conditions appropriate to specific food types
- Maintain appropriate environmental conditions
- Keep storage areas free from contaminants and pests

4.1 Selecting food storage conditions appropriate to specific food types

It's important to take care how you store food to make sure it's safe to eat. Find out below about storing food in the fridge, freezer, or in containers such as tins and jars

Food Storage and Transportation business;

This guide is created for supporting the implementation of the safety and hygiene requirements in food storage, distribution and transport establishments. This guide will enable such food businesses to understand in more detail how they can comply with the legal requirements which are expressed in more general terms in the regulations and help them to implement good hygiene practices tailored to the characteristics of their function. To prevent contamination of pathogens, appropriate food safety practices and temperature control play the most important roles during handling, transportation, storage and retailing of the food .The descriptions in this guide facilitate both compliance with regulations and a uniform approach at every stage food storage varies based on different type and conditions this are explain for picture .



Figure 4:1 Variety Arrangement of food storage

Food safety is an assurance that food will not cause any harm to the consumer upon consumption. It refers to the practice of limiting the presence of safety hazards whether one time or chronic or acute, that may make food injurious to the health of the consumer. Food safety is about producing, handling, storing and preparing food in such a way as to prevent infection and

contamination in the food production chain, and to help ensure that food quality and wholesomeness are maintained to promote good health. Food Storage - Specific GMP conditions Storage conditions should maintain the fitness, nutritional value, appearance and taste of food.

4.2. Maintain appropriate environmental conditions

Food storage varies based on different conditions: Among environmental conditions that affect food storage are:

- **Humidity ;** Humidity monitoring Provide humidity monitoring systems and devices in temperature-controlled rooms that are used to store .

  Which require a humidity-controlled environment. Comply with the following minimum requirements.

  • Sensors accurate to ± 5% RH.

  • Sensors calibrated as per clause 4.10.2.

  • Sensors located to monitor worst-case humidity levels within the qualify storage volume defined in clause 4.7.

  • Sensors positioned so as to be minimally affected by transient events such as door opening.

- **Lighit**

  Light is one of the important for the selecting deteriorate and ill foods for the transporting and storing time**.**

- **Pests**

  The have evidence of pests means that the food could be in contact with pests or pest residues

d. Temperature; Temperature control Provide thermostatic temperature control systems for all temperature controlled rooms, cold rooms, freezer rooms, refrigerators and freezers, used to store . Comply with the following minimum requirements:

• System able continuously to maintain air temperatures within the set point limits throughout the validated storage volume

• control sensors accurate to ± 0.5 °C or better

• Control sensors calibrated as described in clause 4.10.1

• Control sensors located in areas where greatest variability in temperature is expected to

occur in order to maximize available safe storage volume;

4.3. Keeping storage areas free from contaminants and pest

a. Keeping storage areas free from contaminants

- **Food that goes in the fridge**

Some food needs to be kept in the fridge to help stop bacteria from growing on it, such as food with a 'use by' date, cooked food and ready-to-eat food such as desserts and cooked meats.

- **Make sure your fridge is cold enough**

You need to make sure your fridge is cold enough otherwise food poisoning bacteria will still be able to grow. Your fridge should be between 0ºC and 5ºC.

If you're not sure how the temperature setting or dial works on your fridge, you could use a fridge thermometer to check it's the right temperature.

Here are a few other fridge tips that you might find useful:

- ✓ Keep the fridge door closed as much as possible
- ✓ Wait for food to cool down before you put it in the fridge

- **Keeping food in the fridge**

To help stop bacteria from growing, remember:

- ✓ When the label says 'keep refrigerated', make sure you do keep the food in the fridge. If the food isn't
- ✓ Labeled with any storage instructions and it's a type of food that goes off quickly, you should put it in the fridge and eat it within two days.
- ✓ Some jars and bottles need to be kept in the fridge once they've been opened. Always check the label and follow any storage instructions. Potential hazards Potential hazards that must be controlled in refrigerated storage include bacterial growth, cross contamination, and food beyond date marking. Controls Refrigeration slows down bacterial growth and this is why high-risk
- ✓ Perishable foods should be kept refrigerated. Hot food must not be placed directly

into the refrigerator as it will raise the temperature of the refrigerator above acceptable limits and may cause condensation leading to cross-contamination of food already inside

- ✓ When you're preparing food, keep it out of the fridge for the shortest time possible, especially when the weather (or the room) is warm.
- ✓ If you have made some food (such as a sandwich or a cold dish) and you're not going to eat it straight away, keep it in the fridge until you're ready to eat it.
- ✓ If you're having a party or making a buffet, leave the food in the fridge until people are ready to eat. Generally, you ***shouldn't*** leave food out of the fridge for ***more than four hours.***
- ✓ Cool leftovers as quickly as possible (ideally within one to two hours) and then store them in the fridge. Eat any leftovers within two days, except for cooked rice, which you should eat within one day to help avoid food poisoning

- **Storing meat**

It's especially important to store meat safely to stop bacteria from spreading and to avoid food poisoning. You should:

- ✓ Store raw meat and poultry in clean, sealed containers on the bottom shelf of the fridge, so they can't touch or drip onto other food
- ✓ Follow any storage instructions on the label and don't eat meat after its 'use by' date
- ✓ When you have cooked meat and you're not going to eat it straight away, cool it as quickly as possible and then put it in the fridge or freezer. Remember to keep cooked meat separate from raw meat.

- **Keeping food in the freezer**

The freezer is a great tool for making sure you've always got some food in stock and for helping to avoid wasting food. You can keep food safely in the freezer for years, in theory, as long as it has stayed frozen the whole time.

However, the taste and texture of food changes if it's frozen for too long, so you might well find that it's not very nice to eat.

For safety, it's OK to freeze most raw or cooked foods providing you do the following things:

- ✓ Freeze it before the 'use by' date
- ✓ Follow any freezing or thawing instructions on the label
- ✓ Thaw it in the fridge so that it does get too cold. Or, if you intend to cook it as soon as it's defrosted, you could defrost it in a microwave try to use it within one to two days after it's been defrosted – it will go off in the same way as if it were fresh.
- ✓ Cook food until it's steaming hot all the way.

When frozen meat and fish (and some other foods) thaw, lots of liquid can come out of them. If you're defrosting raw meat or fish, this liquid will spread bacteria to any food, plates or surfaces that it touches. Keep the meat and fish in a sealed container at the bottom of the fridge, so that it can't touch or drip onto other foods.

- **Storing dry food, tins, jars and drinks**

Many types of food don't need to be kept in the fridge to keep them safe to eat, for example dry foods such as rice, pasta and flour, many types of drinks, tinned foods, and unopened jars. But it's still important to take care how you store them.

Here are some tips:

- ✓ Try to keep food in sealed bags or containers - this helps to keep them fresh and stops anything falling into the food by accident.
- ✓ Don't store food or drinks near cleaning products or other chemicals
- ✓ Don't use old food containers to store household chemicals, and don't store food in containers that have been used for other purposes
- ✓ Only reuse plastic water bottles if they're not damaged and you can clean them
- ✓ Don't store food on the floor, because this can encourage mice, ants and other pests
- ✓ Keep the storage area dry and not too warm
- ✓ Remember that some types of food might need to be kept in the fridge once you've opened them –follow any storage instructions on the label.

Tin cans

When you open a can of food and you're not going to use all the food straight away, empty the food into a bowl, or other container, and put it in the fridge.

Don't store food in an opened tin can, or re-use empty cans to cook or store food. This is because when a Can has been opened and the food is open to the air, the tin from the can might transfer more quickly to the can's contents.

Cling film and kitchen foil

Cling film

Cling film is useful for protecting food but, like many things, it needs to be used correctly. Not every type of cling film is suitable for using with all foods. Check the description on the box to see what foods it can be used with.

There are three main points to remember when using cling film:

- ✓ Don't use cling film if it could melt into the food, such as in the oven or on pots and pans on the hob.
- ✓ You can use cling film in the microwave (in accordance with the manufacturer's instructions), but make sure the cling film doesn't touch the food.
- ✓ Only let cling film touch high-fat foods when the description on the box says the cling film is suitable

- ✓ High-fat foods include some types of cheese, raw meats with a layer of fat, fried meats, pies and Pastries, and cakes with butter icing or chocolate coatings.

- **Kitchen foil**

Kitchen foil, which is made from aluminum, can be useful for wrapping and covering foods. But it's best not to use foil or containers made from aluminum to store foods that are highly acidic, such as:

- ✓ Tomatoes
- ✓ Rhubarb-sour testing with red and green stem
- ✓ Cabbage

- ✓ any types of soft fruit

This is because aluminum can affect the taste of these sorts of food, especially if they are stored in aluminum containers for a long time.

Specific food types include:

- ✓ Dairy products
- ✓ Dried food
- ✓ Eggs
- ✓ Frozen food
- ✓ Fruit and vegetables
- ✓ Meat and fish

b. keeping storage areas free from Labelling

Labelling generally Label internal shipping and external distribution containers containing as follows:

• identify the product in accordance with all national and international labelling requirements relevant to the container content, transport route and mode

• identify hazardous products in accordance with relevant national and international labelling conventions

• indicate the appropriate temperature and humidity ranges within which the product is to be transported and/or stored. Labelling air-freighted shipments in cases are to be air-freighted, the package should be labelled using the standard International Air Transport Association (IATA) time and temperature

Apply the label to the outer surface of individual shipping packages, over packs or bulk containers. Reason: To ensure that products are correctly and safely handled at all points in the supply chain. 8. Stock management Pre-packaged foods should be labelled with clear instructions to enable the next person in the food chain to handle display and store and use the product safely. Knowledge of mandatory food labelling requirements are critical. At every stage pre-packaged products should be checked for proper labelling and compliance with mandatory provisions

Self Check _4	Written Test_4

Name……..Id No……Time Allowed……

Directions: Answer all the question listed below.

1. What are the conditions considered during food storage? Explain in detail
2. What is the appropriate food storage temperature?
3. Why should one need to control the storage temperature of food items?
4. What is the advisable temperature to store potentially hazardous food items?

Answers (Hint.)

1 Food storage condition should be:

- Clean storage area
- Pest control
- Control storage temperature

2. Temperature that ranges out of danger zone is the most advisable
    - Cold food <5°C and hot food>60°C

3. We control storage temperature in order to avoid food intoxication and infection

4. Canned food should be stored up to -18°C and hot food should be placed in a Bain Marie and chafing dish (above 60°C).

Reference

- The act itself sets out broad principles, while regulations contain detailed provisions governing the different categories of products coming under the jurisdiction of each set of regulations (Casella, A. 2001).

- The act itself sets out broad principles, while regulations contain detailed provisions governing the different categories of products coming under the jurisdiction of each set of regulations (Casella, A. 2001).

- Food regulation, which subjects suppliers of goods and services to behavioral control and which penalize those who fail to perform in accordance with the specified standards are the dominant form of social regulate.

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