



# CONFECTIONARY PROCESSING

## Level-II

Based on May 2019, Version 1 Occupational standards

**Module Title: -Identifying Raw Ingredients Used in Confectionery**

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<b>LG #15</b>	<b>LO #1 Define raw ingredients used in confectionery production</b>
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<b>Instruction sheet</b>
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Identifying Key confectionery groups
- Identifying Commonly used raw ingredients and their origins
- Identifying common problems with raw materials in the production process
- Types of carbohydrates in confectionery
- Types of sweeteners in confectionery
- Describing grades and characteristics of sugar.
- Types of starches and glucose syrups
- Types of fats in confectionery
- Identifying Uses of glucose in confectionery
- Identifying types of gum base in confectionery
- Identifying types of additives in confectionery

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:

- Identify Key confectionery groups
- Identify Commonly used raw ingredients and their origins
- Identify common problems with raw materials in the production process
- Types of carbohydrates in confectionery
- Types of sweeteners in confectionery
- Describe grades and characteristics of sugar.
- Types of starches and glucose syrups
- Types of fats in confectionery
- Identify Uses of glucose in confectionery
- Identify types of gum base in confectionery
- Identify types of additives in confectionery



### Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the information Sheets
4. Accomplish the Self-checks
5. Perform Operation Sheets
6. Do the “LAP test”

### Information Sheet1

### Identifying Key confectionery groups

#### 1.1. Introduction

Confectionery is an important food item of great popularity among wide range of population. It has been enjoyed as a major food delicacy from ancient times. The term confectionery is ambiguous and describes a spectrum of sweet goods and takes on different meaning depending on the country in which it is used, for example in the United Kingdom the term applies to any sweet product including cakes. In the United States confectionery is candy and includes sugar confectionery and chocolate confectionery. Globally, confectionery foods represent 50% by volume of foods.

Confectionery can be classified into four major groups. They are as follows:

#### ❖ Sugar confectionery

It includes products using mainly sugar such as boiled sweets, fondants, fudge, jellies, toffees, etc.

#### ❖ Chocolate confectionery

It includes mainly cocoa, chocolate and chocolate products. Sugar confectionery coated with chocolate is also included in it.

#### ❖ Flour confectionery



It

includes baked products such as cakes, biscuits, cream rolls, etc. Traditional Indian cereal and legume flour based sweets such as mysorepak, soanpapdi, badushah; jalebi, etc. are also included in this category.

#### ❖ **Milk-based confectionery**

It includes mainly Indian traditional milk-based sweets such as *burfi*, *peda*, *rasogolla* etc.

In sugar confectionery, sugar is the main or principal ingredient while in other confectionery sugar is used as one of the ingredient.

#### ❖ **Sugar Confectionery Groups**

Depending on the structural geometry, sugar confectionery is grouped into two major groups: amorphous and crystalline.

It includes baked products such as cakes, biscuits, cream rolls, etc. Traditional Indian cereal and legume flour based sweets such as mysorepak, soanpapdi, badushah; jalebi, etc. are also included in this category.

#### ❖ **Confectioner groups**

- high boils(hard candies), cream pastes, toffees caramels and fudge
- fondants
- jellies, gums and pastilles
- liquor ice
- honeycomb, meringues, marshmallows and nougats
- panned products
- chewing gum
- bubble gum
- chocolate
- sugar free product
- caramel
- fondant
- sweetness
- marzipan



- praline
- gianduja chocolate truffles
- jelly bean



Fig1 confectioner group







<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test. 1 say “true” or “false” for the following questions (each 2 pts.)**

1. Cocoa is use for chocolate and chocolate product. And Sugar confectionery for coated
2. Milk confectioners is baked products such as cakes, biscuits, cream rolls,
3. Flour confectionery is grouped of amorphous and crystalline

**Test. 2 Give Short Answer Questions (each 2 point)**

1. List group of confectioner?
2. Define the meaning of confectioner?

**Note: satisfactory rating- (≥5point)      Unsatisfactory-below5**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



<b>Information Sheet 2-</b>	<b>Identifying commonly used raw ingredient and their origin</b>
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**2.1 Identifying commonly used raw ingredient**

Raw ingredient is key to healthy eating habits. it only by the best raw ingredient that you will get the best final products

- ❖ **Cocoa beans**, from which cocoa products are derived, come from the cocoa tree, which is the species Theobroma cacao. The genus Theobroma, from which the cocoa tree species comes, originated millions of years ago in South America, to the east of the Andes.
- ❖ **Sugar** is made in the leaves of the sugarcane plant through photosynthesis and stored as a sweet juice in sugarcane stalks. Sugarcane is cut down and harvested then sent to a factory. At the factory, cane juice is extracted, purified,
- ❖ **Gum base** it collect from several Mesoamerican trees and chewing gum stearic acid used in many gums. obtain animals, and fat modern chewing gum was first developed in the 1860s when chicly was brought from Mexico by the former in new
- ❖ **Glucose** comes from the food we eat. Carbohydrates such as fruit, bread pasta and cereals are common sources of glucose. These foods are broken down into sugar in our stomachs, and then absorbed into the blood stream. Was first isolated from raisins in 1747 by the German chemist
- ❖ **Glycerin** is a natural. Occurring alcohol compound and a component of many lipids. **Glycerin** may be of animal or vegetable. origin It was first discovered in 1779 by the Swedish chemists
- ❖ **milk product** the ability to digest the milk sugar lactose first evolved in dairy farming communities in central Europe, not in more northern groups as was previously thought,
- ❖ **Solid oil fats** mainly **come** from animal foods and **can** also be made from vegetable **oils** through a process called hydrogenation. Solid fats contain more saturated **fats** and/or trans fats than oils.



**Fig1 ingredient identification**



✧ **The following are some reasons why raw ingredients are added to foods:**

- **Maintain or Improve Safety and Freshness:** Preservatives slow product spoilage caused by mold, air, bacteria, fungi or yeast. In addition to maintaining the quality of the food, they help control contamination that can cause foodborne illness, including life-threatening botulism. One group of preservatives -- antioxidants -- prevents fats and oils and the foods containing them from becoming rancid or developing an off-flavor. They also prevent cut fresh fruits such as apples from turning brown when exposed to air.
- **Improve or maintain Nutritional Value:** Vitamins and minerals (and fiber) are added to many foods to make up for those lacking in a person's diet or lost in processing, or to enhance the nutritional quality of a food. Such fortification and enrichment has helped reduce malnutrition in the U.S. and worldwide. All products containing added nutrients must be appropriately labeled.
- **Improve Taste, Texture and Appearance:** Spices, natural and artificial flavors and sweeteners are added to enhance the taste of food. Food colors maintain or improve appearance. Emulsifiers, stabilizers and thickeners give foods the texture and consistency consumers expect. Leavening agents allow baked goods to rise during baking. Some additives help control the acidity and alkalinity of foods, while other ingredients help maintain the taste and appeal of foods with reduced fat content



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test. 1 say “true” or “false” for the following questions (each 5pts. )**

- 1 Sugar is made in the leaves of the sugarcane plant through photosynthesis.
- 2 dry ingredient mainly comes from animal

**Test. 2 give short answer (each 5pts. )**

1. Defines the meaning Glycerin?
- 2 Why raw ingredients are added to foods?

**Note: satisfactory rating ( ≥10 point)                      Unsatisfactory-below 10**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



<b>Information Sheet</b>	<b>Identifying common problems with raw materials in the production process</b>
<b>3-</b>	

### 3.1 Identifying common problems with raw materials in production process

Raw materials are materials or substances used in the primary production or manufacturing of goods.

✧ The most common problems raw material to fit into **four** categories:

- **Quality problems:** High defect rate, high return rate and poor quality.
- **Output problem:** Long lead time, unreasonable production schedule, high inventory rate, supply chain interruption.
- **Cost problem:** Low efficiency, idle people or machines.
- **Management problem:** Potential safety hazard, bad working conditions.

In some cases, raw materials may be divided into two categories: **direct and indirect**.

- Direct raw materials are placed in current assets as discussed above. Direct raw materials are expensed on the income statement within cost of goods sold.
- Indirect raw materials will be recorded as long-term assets. Within long-term assets, they can fall under several different categories including selling, general, and administrative or property, plant, and equipment.



## THE BIG 4 PRODUCTION PROBLEMS

During the manufacturing process, there are many production issues that can occur that affect the product you're putting out there, which in turn affects the public's perception of your brand.

### QUALITY PROBLEMS:





1 QUALITY P



High Defect Rat

2 OUTPUT



Long Lead



Unreasonable P  
Schedu

3 COST PRO

### 3.2.1 The are 4 problem of manufacture industry

- **The manufacturing skills** gap manufacture one of the biggest manufacturing challenges in businesses face is the growing skills gap. The country has an aging workforce consisting mainly



of

baby boomers. As such, the manufacturing sector desperately needs skilled, younger workers.

• **Inventory and supply chain management**

Managing your supply chain and inventory is crucial to any manufacturing business. As companies look to ramp up production, they also need better, more agile manufacturing processes.

• **The Internet of Things**

The internet of things is opening up a world of opportunity for consumers and manufacturers alike. The popularity of fitness trackers and smart home devices shows no signs of slowing down. More and more customers expect to be able to connect their devices to products like fire alarms, doorbells, and refrigerators.

• **Incorporating robotics and automation**

Automating production lines can help manufacturing companies produce more in less time. But implementing automation and bearing the upfront cost of robotics poses specific challenges. The good news is those challenges are more than outweighed by the benefits.

<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**.Test 1 say “true” or “false” for the following questions ( 5pts. )**

1 Direct raw material is placed in current assets.

**Test 2: choose the best answer for the following Questions (each5point)**

1 which of the following is problem of raw materials

A Quality problems B flour C Cost problem D a& c E all

2 Which one is recorded as long-term assets?

A indirect raw materials B purchase C direct raw material D all

3 one is true problem of manufacture industry

A material B storage C Inventory and supply chain management D none

**Note: satisfactory rating-( ≥10point)**

**Unsatisfactory-below 10**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_

Information Sheet 4-	Type of carbohydrates confectionery
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#### 4.1. **Type of carbohydrates confectionery**

A carbohydrate is biomolecule consisting of carbon, hydrogen and oxygen atoms. Usually with a hydrogen-oxygen

traditional confectionery are calorie foods that contain significant amounts of carbohydrates, the bulk of which is sucrose one of the main requirement the diet of patient with diabetes mellitus is limiting of easily digestible carbohydrates in the diet.

##### ✧ **Type of carbohydrate**

- Starch (also known as complex carbohydrates)
- Sugar
- Fibre

You also hear terms like naturally occurring sugar, added sugar, low Calorie sweeteners, sugar alcohol, reduce- calorie sweeteners, processed grain, enriched grain, complex carbohydrate, sweet, refined grain and whole grain.

##### ✧ **Starch:-** vegetable like peas corn, lima bean and potato

Dried bean, lentil and peas and pea such as pinto bean, kidney bean , black eyed pea and split peas

- Grain like oats, barley and rice( the majority of grain product in the produce US are made from wheat flour. these include pasta bread and crackers but the variety is expanding to include other grain as well

##### ✧ **Sugar:** - is another type of carbohydrate .you may also hear sugar referred to as simple fast acting carbohydrate.

##### ✧ there are two main type of sugar

- naturally occurring sugar such as those in milk or fruit
- added sugar such as those added during processing such as fruit canned in heavy syrup or sugar added to make a cookie



- ✧ **Fiber:** - come from plant foods so there is no fiber in animal's products such as milk, egg, meat, poultry, and fish. Fibre is the indigestible part of plant foods, including fruit, vegetable, whole grain, nut and legumes. when you consume dietary fiber, most of it passes through the intestines and is not digested
- ✧ good source of dietary fiber include
  - beans and legumes, think black bean, kidney bean, pinto, chickpeas
  - fruit and vegetable , especially those with edible skin(for example, apples, corn and beans) and those with edible seeds (for example berries)

<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test :1 choose the best answer for the following Questions (4 point)**

- 1 From the given choose which one is type of carbohydrate?  
A starch B sugar C fiber D all

**Test 2 Give short answer Questions (each3point)**

- 1 Write the uses of sugar in confectioner?(3point)
- 2 Write the uses of starch in confection?

**Note: satisfactory rating- (≥5point)**

**Unsatisfactory-below 5**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



### 5.1. Ssweeteners in confectionery

sweetener are substances of low energy value that provide sweet taste but do not have the calories of carbohydrates or their cariogenic or glycemic effect sweeteners have been used as sugar substitutes in many sweet tasting product

#### ✧ **Type of sweeteners**

- sugar (raw, refined)
- sucrose
- molasses
- brown sugar
- honey
- golden syrup
- treacle
- flavor sugar

Sugar is another type of sweetener you may also hear sugar referred to as simple or fast acting carbohydrate. Naturally occurring sugars such as those in milk or fruit Added sugar such as those added during processing such as fruit canned in heavy syrup or sugar added to make a cookie. there are many different names for sugar explain of common names are table sugar, brown sugar, molasses, honey, sugar, cane confectioners', powder sugar, raw sugar

- **Brown Sugar**



Brown

sugar is composed of refined, granulated sugar with some impurities remaining or molasses added. It is a somewhat moist sugar and must be stored properly in an airtight container to keep the moisture inside

- **Flavor sugar**

Flavored sugar, or rimming sugar, is composed of a sugar with added flavoring. It is most often used to flavor and color the rims of margarita glasses and martini glasses.



Fig 1 colored sugar

### 5.1.1. Artificial Sweeteners

Artificial sweeteners are sugar substitutes with non-nutritive values. Popular types of sugar substitute include: Aspartame, Acesulfame-K, Saccharin, and Sucralose.

- Aspartame is not recommended for baking applications, Saccharin are great sugar substitutes for baking and cooking applications
- Sucralose can be used in baking applications but does not provide the same structural benefits that sugar does and may require the baked good to be refrigerated





### 5.1.2. Types of Liquid Sweeteners

Liquid sweeteners are a great alternative to solid sweeteners and can be used in a variety of applications from drinks to baked goods to being used as toppings and spreads. For honey, maple syrup, molasses, agave nectar, and corn syrup, as the color deepens the flavor becomes richer and more intense. These sweeteners pair well with both sweet and savory dishes.

#### a. Corn Syrup

Corn syrup is liquefied sugar created by processing cornstarch.

#### b. Agave Nectar Syrup

Agave nectar syrup is a fast-dissolving sweetener that is commercially produced from several species of agave.

#### c Honey

Honey is a thick, sweet liquid from nectar.

- Produced by bees and can vary from pale yellow to dark brown in color
- There are countless varieties of honey available in comb, chunk-style, liquid, or whipped form



Fig3 honey



#### d Maple Syrup

Maple syrup is the result of boiled maple tree sap.



Fig1.



## Flavored Syrup

### e Molasses

Molasses is the liquid byproduct of sugar refining.

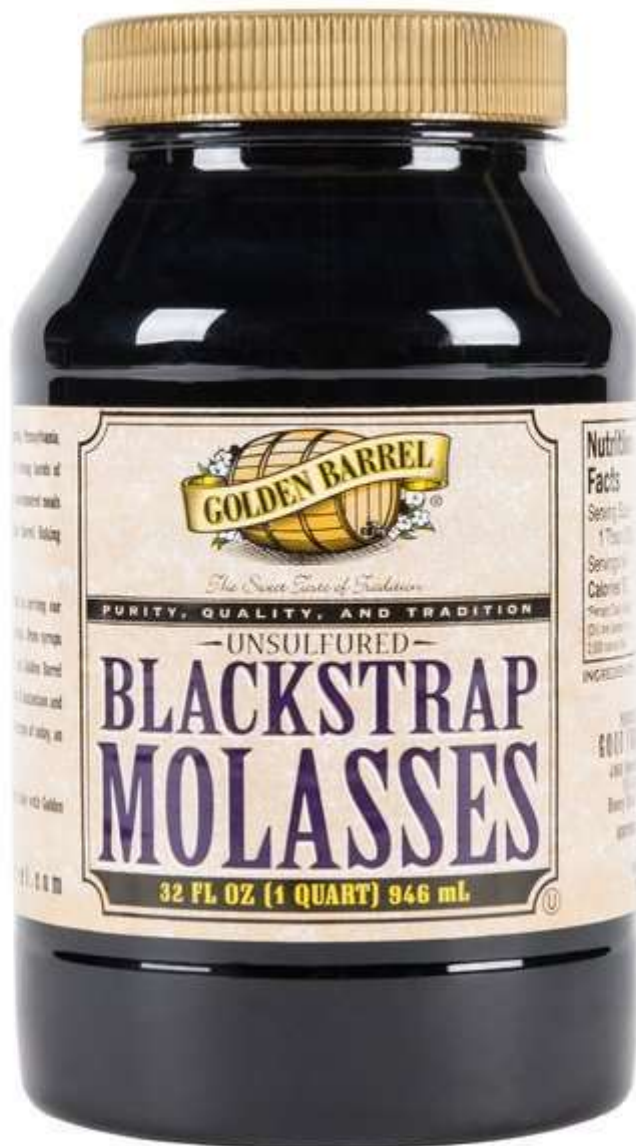




Fig2 Molasses

Self-check 5	Written test
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test 1 say ‘true’ or ‘false’ ( 2 point)**

1 Artificial sweetener is sugar substitutes with non-nutritive values.

**Test 2 choose the best answer for the following Questions (each 5 point))**

1 From the given choose which one is type of sweeteners?

A flour B cocoa C sucrose D none

2 Which one is a type of Liquid Sweeteners?

A Molasses B raisin C sugar D all

3 Which one is a thick, sweet liquid from nectar?

A sugar B cake C Honey D orange

4 one is substances of low energy value that provide sweet taste.

A flour b starch C Sweeteners D cocoa

**Note: satisfactory rating- (≥11point)**

**Unsatisfactory-below 11**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



## Information Sheet 6- Describing grades and characteristics of sugar

### 6.1 Describing grades and characteristics of sugar

Sugar is responsible for so much more than providing the sweet flavor that we've come to know it for. It facilitates the caramelization process, balances the acidity in foods, and contributes to the appearance, flavor, and viscosity of glazes, sauces, and marinades. Additionally, in baking applications, sugar seals the deal between a good confectionery creation and an unforgettable one, adding sweetness, retaining moisture, prolonging freshness/shelf life, aiding in the creaming process, and imparting color and flavor to crusts.

Total of seven sugar grades namely L31,L30,M31,M30,S31,S30, and s31based on flour crystal size, large ,medium, small and super small and two colour series 31&30 (31colour series sugar being comparatively better in colour than 30 colour series sugar were issued by the expert committee having members.

#### ✧ grades of sugar

- caster sugar
- icing sugar
- liquid sugar

#### ✧ characteristic of sugar

- sweetness





- solubility
- crystallization
- inversion
- 

Fig1 icing sugar



Fig 2 caster brown sugar

**Liquid sugar** is white granulated sugar that has been dissolved in water. Simple syrup is liquid sugar with a 1:1 ratio of sugar and water. Liquid sugar is often used in drinks.

be used



Amber liquid sugar is darker in color and can be used when brown color is desired.



**Fig. 3 Liquid sugar**

- **Honey caramels**

Ingredients of honey caramels

75g Honey

75g glucose

6Tb sugar

tb vanilla powder

2cup water

The procedure of honey caramel Preparation are as follows

Firstly, Heat the water in a large skillet (frying pan). Ensure that no odd flavors from the skillet can affect the product. Reduce the heat and dissolve the sugar in the hot water, stirring it to avoid caramelization on the bottom. Add the glucose, which is placed to dissolve in the middle of the syrup. The glucose may be replaced by honey and added at a later stage. Let it simmer for a while. Skim off the foam and clean crystals from the edges of the pot by covering it for three minutes. Uncover, stir and heat until the hard ball stage is reached, between 1250 and 128 °C. Use a thermometer or drop test for control. Add the honey and aromas and continue heating until the soft crack stage is reached at 145 °C.



Pour

the hot liquid onto a cold and greased. Or tray. Allow to cool sufficiently until a good malleability is reached, spread it evenly and stamp or press out the desired shapes or forms. Let it cool for a few moments and cover with sugar crystals or powdered sugar prior to packing. These caramels can be flavored with honey only or with other essences and herbal extracts such as vanilla, eucalyptus, mint. The cutting has to be done relatively quickly before the caramel becomes too hard.





## Tools

and equipment's for Making honey caramel

1. 1 frying pan
2. beaker
3. glass jar
4. mixer
5. measuring cup
6. spoon
7. measuring cylinder
8. brix measurement
9. weighing balance



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Give Short Answer Questions (each 4 point)**

1. List type of grades?
- 2 List the characteristic of sugar?
- 3 Define the meaning of Liquid sugar

**Note: satisfactory rating- ( $\geq 6$ point)**

**Unsatisfactory-below 6 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



<b>Information sheet 7</b>	<b>Types of starches and glucose syrups</b>
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### 7.1 type starches and glucose syrups

Starch is the main source of energy for the human body and most of us consume the food containing starch (grains and vegetables) on a daily basis because we need carbohydrates to function. Starch can also be extracted from all these vegetables and grains to be used as a separate high quality food ingredient or to make other starch-based:

There are two types of starch in food; amylose and amylopectin. The ratio of the two starches.

Starch type	Amylose content (%)	Amylopectin content (%)
<b>Potato</b>	20–21	79–80
<b>Wheat</b>	25–30	70–75
<b>Tapioca</b>	16–17	83–84
<b>Corn</b>	25–28	72–75



Fig1. starch food



## ✧ **characterise of starch**

### **bifringence:**

**Viscosity** is a measure of a fluid resistance to flow. Viscosity is important property of fluid foods. it is defined as the internal friction of a liquid or its ability to resist flow. Ones the stirring has stopped the speed of the vortex is gradually reduce and rotation of the liquid eventually stops.

### **7.1.1. Types of starchy foods**

Potatoes are a great choice of starchy food and a good source of energy, vitamins and potassium. Bread, especially whole meal, granary, brown and seeded varieties, is a healthy choice to eat as part of a balanced diet.

- Cereal products.
- Rice and grains.
- Pasta in your diet.

Starch syrup is a purified and concentrated product obtained as a result of the processing of starch from corn. Starch syrup is widely used in the food industry and cooking as a thickener and sweetener. The production of starch syrup occurs through enzymatic hydrolysis of corn starch with subsequent purification.

✧ **Glucose syrup** is a substance primarily used in commercial food production as a sweetener, thickener, and moisture-retaining agent. As it doesn't crystallize, it's often utilized to make candy, beer, fondant, and certain canned and premade baked goods. Glucose is mainly made by plants and most algae during photosynthesis from water and carbon dioxide, using energy from sunlight, where it is used to make cellulose in cell walls, which is the most abundant carbohydrate

### **Ingredients of glucose syrup**

- 3cups caster sugar.

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pinch salt

- 3/4 cups water.
- 1 teaspoon cream of tartar

✧ **use glucose syrup**

- anti-graining
- resistance to activity by microorganisms
- increasing product viscosity

Tools and equipment's for Preparing Glucose syrup

10.1 frying pan

11.beaker

12.glass jar

13.mixer

14.measuring cup

15.spoon

16.measuring cylinder

17.brix measurement

18.weighing balance



<b>Self-check 7</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: choose the best answer for the following Questions. (each 5point)**

1 From the given choose which one is types of starchy foods

A onion B Shorting C Viscosity D none

2 Which of the following is purified and concentrated product obtained as a result of the processing of starch from corn?

A Starch syrup B Glucose syrup C sugar D cocoa

**Note: satisfactory rating- (≥5point)      Unsatisfactory-below 5 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



### 8.1. fats in confectioner

Dietary fat are essential to give your body energy and to support cell growth. They also help protect your organ and help keep your body warm. Fat help your body absorbs some nutrient and produce important hormones.

### 8.2. Types of fats in confectioner

- .Table butter
- Margarine
- Vegetable oil
- cocoa butter
- coconut oils,
- milk fat



Fig1butter



Fats for confectionery use must be completely or almost completely melted at about 37C. If they have higher melting point they give an unpleasant greasy sensation in the mouth. On the other hand, low melting fats lack body and tend to make sweets oily, which can also result in bloom defect on chocolate covered products. Cocoa butter has almost ideal properties for use in confectionery. Lauric fats such as palm kernel and coconut oils, partially hydrogenated oils such as soy, ground nut, rapeseed, etc. are also used. Butter is used mainly for its flavour.

#### ✧ Emulsifiers

The usual emulsifiers used in confectionery are lecithin or glycerol monostearate. Both are used to assist the emulsification of fat into product but while the lecithin is generally used for hard boiled sweets, glycerol monostearate is preferred for toffees and caramels as it provides lubrication for cutting knives during processing.

#### ✧ Where are confectioner fats used

- Coating
- Filling
- Toffees and caramels
- Ice cream

#### ✧ Role of fat in confectioner

- Blending
- Tenderness of product





Fig1 fat group



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test 1 choose the best answer for the following question (each 4point)**

- 1 From the given choose which one is Role of fat in confectioner  
A for blending B texture C consistence D all
- 2 Which of the following is confectioner fats used for\_\_\_\_\_?  
A Coating B Filling C caramels D Ice cream

**Note: satisfactory rating- ( ≥4point)                      Unsatisfactory-below 4 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_ score=\_\_\_\_\_

Rate =\_\_\_\_\_



<b>Information Sheet- 9</b>	<b>Identifying Uses of glucose in confectionary</b>
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### 9.1 Identifying Uses of glucose in confectionary

Glucose is a sugar. Maize (corn) is commonly used as the source of the starch in the us, in which case the syrup is called corn syrup but glucose syrup is made from potatoes and wheat, and less often from barley, rice and cassava. Glucose syrup is used in food to sweeten, soften, texture and add volume. Liquid glucose is the syrup form of glucose which is a maize starch. Also known as glucose syrup or confections syrup know about the importance of glucose in confectioner

Such as

- **Flavour enhancer**

The first and major benefit of liquid glucose is that it acts as a flavour enhancer in candies and other kinds of food

- **Crystalizing**

Another important application of the corn syrup is that it helps in controlling sucrose and dextrose crystallization in confection.

Liquid glucose also finds use as a stabilizer and can greatly enhance the shelf life of certain product.

- **Texture enhancer**

Yet amongst the important liquid glucose uses is that it acts as a texture enhancer and lends a smooth texture and body to product.



- **Fermentation**

Another important application of indian liquid glucose is that it acts as an economical source of fermentable solid and is thus a popular product in the baking industry

- **Humectants**

Liquid glucose increases the humectancy level in some kind of baked items.

- **Adjuncts**

Corn syrup also has a lot of advantages as an adunct. An adjunct basically in used to supplement malted barley in the process of brewing.

## **9.2. uses of glucose in confectionary**

Glucose syrup is used in confectioner to sweeten, soften texture and add volume by converting some of the glucose in corn syrup in to function (using an enzymatic process. A sweeter product high fructose corn syrup can be produced.

Glucose is found in many different fruit, vegetable, and starches but the name grape sugar is still commonly used.



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: choose the answer for question the following (each 5 point)**

- 1 \_\_\_\_ is Glucose is a sugar. Maize is commonly used as the source of the starch  
 A confectioner B chocolate C glucose D all
- 2 Which of following is liquid glucose uses?  
 A Texture enhancer B chocolate C sugar D salt

**Note: satisfactory rating- (≥5point)                      Unsatisfactory-below 5 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_ score= \_\_\_\_\_  
 Rate = \_\_\_\_\_



### 10.1 Identifying types of gum base in confectionery

Gum base is the non-nutritive, non-digestible, water insoluble masticatory delivery system used to carry sweeteners, flavor, and any other substance in chewing gum and bubble gum. Chewing gum is made of a combination of food grade polymers, waxes and softener that gives gum the texture desired by consumer and enable it to effectively deliver sweetness, flavor and various other benefits, including dental benefit. There are many types of bubble and chewing gum out there, Chewing gum is one of the most popular confectionery products. Due to its sensory properties and possible health effects such as positive influence on dental health.

#### Type of gum base

- natural gum base
  - ❖ Include latex like chicle, jelutong, gutta-percha, rosin etc.
  - ❖ old gum base
- include vegetable gums like chicle, spruce gum, or mastic gum
  - ❖ alternative choices were waxes, paraffin wax and beeswax



All About Gum Base - Glee Gum  
gleegum.com



Fig2 gum base

Fig 1 base gum



Chewing gum can be classified as a product containing a liquid phase and a crystalline phase, providing gum with its characteristic balance of plastic and elastic properties. Gum base is formed from natural resins like sorva and jelutong. Nature gum base include latexes like chicle, jelutong, gutta- percha, rosin,etc. old gum bases were based on latexes, vegetable gums like chicle, spruce gum, or mastic gum .alternative choices were waxes, paraffin wax and beeswax.



**Fig 1 bubble gum**



## 10.1. importance of gum

Gums are the tissue that surround and protect teeth, along with the underlying bone. gums attach to the teeth .Forming a seal that protect underlying bone and provide a barrier against infection it is important to take good care of you gums by brushing after meal and flossing daily to around your teeth, and to prevent the formation of plaque on tooth surface



Fig 1 gum





<b>Self-check 10</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I say true or false (each5point)**

- 1 Gums are the tissue that surround and protect teeth.
- 2 the role gum in confectioner to stimulate the appetite

**Test II :Give Short Answer (each4point)**

- 1 what is the importance of gum in confectioner?
- 2 List type of gum?

**Note: satisfactory rating- (≥9point)                      Unsatisfactory-below 9 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



<b>Information sheet. 11</b>	<b>Identifying type of additives in confectionery</b>
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### **11.1 Identifying type of additives in confectionery**

Food additive is any substance added to food. Legally, the term refers to any substance the intended use of which results or may reasonably be expected to result -directly or indirectly in it's becoming a component or otherwise affecting the characteristics of any food. This definition includes any substance used in the production, processing, treatment, packaging, transportation or storage of food. The purpose of the legal definition, however, is to impose a premarket approval requirement. Therefore, this definition excludes ingredients whose use is generally recognized as safe (where government approval is not needed), additives provisions of law, and color additives and pesticides where other legal premarket approval requirements apply.

Direct food additives are those that are added to a food for a specific purpose in that food. For example, xanthan gum used in salad dressings, chocolate milk, bakery fillings, puddings and other foods to add texture is a direct additive. Most direct additives are identified on the ingredient label of foods.

Indirect food additives are those that become part of the food in trace amounts due to its packaging, storage or other handling. For instance, minute amounts of packaging substances may find their way into foods during storage. Food packaging manufacturers must prove to the U.S. Food and Drug Administration (FDA) that all materials coming in contact with food are safe before they are permitted for use in such a manner.



**Fig.1 Color additive**



**Fig. 2 food item**

Food additives are classified into 4-four categories in total.

- a. Designated Additives
- a) Existing Food Additives
- c Natural Flavoring Agents
- d Ordinary food used as an food additive

### **A Designated Additives**

provides that “Additives (excluding natural flavoring agents and that have generally been served for human consumption and that are used as additives) and preparations and food containing additives shall not be sold, or be produced imported processed used, stored, or displayed for the purpose of marketing, except for cases

### **B Existing Food Additives**

No new existing additive will be added to the list. Rather, it is likely that any substance that has not been used for a long time



C

### **Natural Flavoring Agents**

The term natural flavoring agents as used in this Act shall mean substances obtained from animal or plants or mixtures thereof which are used for flavoring of food.

### **D Ordinary food used as a food additive**

This category of foods, that substances which are generally provided as food and which are used as additives is not referred to in the provisions of the Food Sanitation Act either these are referred to as ordinary foods used as additives and many are used as coloring

#### **Example of Additives**

- Preservative ascorbic acid eg. lemon juice,
- Color additives.;eg. fruit and vegetable juice,
- Flavors and spices; eg real vanilla or artificial vanilla



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I choose the best answer for the following question (each 4 point)**

- 1 Which one are food additives?  
A. chocolate B. Natural Flavoring Agents C. liquid D. oil
- 2 .One is important for confectioner processing?  
A color B texture C goods D food additive
- 3 Which of the following confectioner items?  
A. onion B garlic C cacao D green pepper

**Note: satisfactory rating-(≥6point) Unsatisfactory-below 6 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_ score=\_\_\_\_\_

Rate =\_\_\_\_\_



<b>Operation sheet 1</b>	<b>Making honey caramel</b>
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## Procedure

Step 1 Wear PPE

Step 2 Identify the ingredient

Step 3 Prepare the mis-en place

Step 4 Check the measurement

Step 5 Heat the water in a large skillet

Step 6 Reduce the heat and dissolve the sugar in the hot water

Step 7 Stir and avoid caramelization on the bottom

Step 8 Add the glucose and simmer and skim off the foam

Step 9 covering it for three minutes

Step 10 Add the honey and aromas and continue heating until the soft crack stage is reached

Step 11 Pour the hot liquid onto a cold greased tray

Step 12 Allow to cool sufficiently until a good malleability is reached

Step 13 cover with sugar crystals or powdered

Step 14 Cut in to dice before the caramel becomes too hard.



1.

Operation sheet 1	Prepare Glucose syrup
-------------------	-----------------------

### Procedure

Step 1 Wear PPE

Step 2 prepare utensils

Step 3 adjust mis-en place

Step 4 identify dry ingredient

Step 5 add the water in to sauce pan

Step 6 mix sugar, salt, and cream of tartar

Step 7 simmer for 4 minutes until the consistence is dissolve

Step 8 remove from heat then cool







<b>LAP TEST</b>	<b>Performance Test</b>
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Name..... ID.....

Date.....

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

**Instructions:** Given necessary templates, tools and materials you are required to perform the following tasks within 1 hour. The project is expected from each student to do it.

**Task-1 prepare glucose syrup**

**Task 2 Making honey caramel**



<b>LG #16</b>	<b>LO #2 identify the effects of raw materials in confectionery production</b>
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<b>Instruction sheet</b>
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Identifying the effects of using different types of raw ingredients in confectionery
- Identifying the effects of using carbohydrates and fats
- Identifying the effect of sugar in confectionery
- Identifying the effect of using characteristics, types of starches and glucose syrups in confectionery
- The effects of temperature and water on raw ingredients

The effects of production processes on raw ingredients 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:

- Identify the effects of using different types of raw ingredients in confectionery
- Identify the effects of using carbohydrates and fats
- Identify the effect of sugar in confectionery
- Identify the effect of using characteristics, types of starches and glucose syrups in confectionery
- The effects of temperature and water on raw ingredients

Learning Instructions:

- 1 Read the specific objectives of this Learning Guide.
1. Follow the instructions described below.
2. Read the information written in the information Sheets
3. Accomplish the Self-checks
4. Perform Operation Sheets
5. Do the “LAP test”



Information sheet. 1	<b>Identifying the effects of using different types of raw ingredients in confectionery</b>
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### 1.1 Identifying the effects of raw ingredients in confectionery

Raw ingredient is a component or necessary part of confectioner Different raw ingredients can have completely different effects on your body. Protein for example, is used by your body to build and repair tissues and make enzymes, hormones, and other body chemicals. It's also an important building block of bones, muscles, cartilage, skin, and blood. Complex carbohydrates, on the other hand, provide the energy your body needs and play a vital role in digestion and the metabolism of protein and fat. They're both important parts of a healthy diet, but they play different roles in your body.

The same goes for almost any ingredient, whether it's healthy or unhealthy. Eating a meal with ingredients that include protein, fiber, and healthy fats will keep your appetite satisfied longer than eating something packed with simple sugars. Complex carbohydrates will give you more sustainable energy than simple carbohydrates will. Eating an apple offers more nutritional value than drinking a glass of processed, sugary apple juice. By taking a few minutes to look through an ingredient list, you can have a better understanding of what your food is going to do for your body.



**Fig1 raw ingredient**



- ❖ **The raw ingredient to gives same advantages**
- To add volume of consistence
- Improve the final product of preparation
- To add color
- Improve the texture
- to give flavor



Self-check 1	Written test
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I say true or false (each4point)**

- 1 The advantage of raw ingredients is improve consistence
- 2 The most common natural flavoring agent in confectioner is ingredient
- 3 Flavor is combination of aroma and taste compounds.

**Note: satisfactory rating-( ≥6point)      Unsatisfactory-below 6 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



**Information-sheet. 2**

**Identifying the effects of using carbohydrates and fats**

**2.1. Identifying the effects of using carbohydrates and fats**

Carbohydrates serve several key functions in your body. They provide you with energy for daily tasks and are the primary fuel source for your brains high energy demands. Fibers are a special type of carb that helps promote goods digestive health and may lower your risk of heart disease and diabetes.

The body uses fat as a few sources and fat is the major storage form of energy in the body. Fat also has many other important functions in the body and moderate amount is needed in the diet for good health. Fat in food come in several forms. Including saturated. monoun saturated and polyun saturated. But too much saturated fat can case cholesterol to build up in your arteries (blood vessels saturated fats raise your cholesterol increase your risk for heart disease and stroke Unsaturated fatty acids containing a hydrocarbon chain having a double bond , are present in large quantities in plants. At room temperature they are usually liquids.

**2.2 Importance of fat in confectioner**

- Develop the gluten
- Creaming ability
- Provide chewy texture
- Tenderizing agent
- Moistening ability
- To give nutritional value
- provide the flavor and mouth feeling

Tran’s fats are characterized by a specific molecular shape. They are found in natural animal fats, milk, and other dairy products. In larger quantities of solids they are present in vegetable fats such



as

margarine. Tran's fats are normally fat particles that have been deformed by a process called hydrogenation. During this process, liquid vegetable oils are heated and combined with hydrogen gas. Partial hydrogenation of vegetable oils makes them more stable and less prone to loss of freshness, which is very good for food manufacturers, but not necessarily for the health of consumers.

Monounsaturated and polyunsaturated fats are known to be "good" fats, and are thought to have a positive effect on heart health, cholesterol levels and general health. Carbohydrates have a wide range of physiological effects which may be important to health, such as:

- Provision of energy
- Effects on satiety/gastric emptying
- Control of blood glucose and insulin metabolism
- Protein glycosylation
- Cholesterol and triglyceride metabolism
- Bile acid DE hydroxylation
- Fermentation
- Bowel habit/laxation/motor activity

### 2.2.1 Side effect of carbohydrate

- dry and scaly skin
- dry eyes
- feeling constantly cold
- hormonal problem including loss of menstrual
- deficiencies in fat soluble vitamins



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Give the Short Answer (each 5point?)**

- 1 What are the uses of fat in confectioner?
- 2 What are the uses of carbohydrate?
- 3 List the effect of carbohydrate in confectioner?

**Test 2 choose the best answer for the following question (3 ponit?)**

- 1 Which one is positive effect of fat in confectioner?  
A Saturated fats fats B Unsaturated fatty C Monounsaturated D none

**Note: satisfactory rating- (≥9point)      Unsatisfactory-below 9 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_ score=\_\_\_\_\_

Rate =\_\_\_\_\_





**Information sheet. 3**

**Identifying the effect of sugar in confectionery**

**3.1 Identifying the effect of sugar in confectionery**

Sugar is responsible for so much more than providing the sweet flavor that we've come to know it for. It facilitates the caramelization process, balances the acidity in foods, and contributes to the appearance. the importance of Sugar in confectionery to add sweetness and to provide the Texture. The ability of sugar to control the crystallization process is very important to the texture and form of sugar in confectionery products such as caramel fillings, toffee and dragées. Sugar confection include sweet sugar based foods which are usually eaten as snack food. This includes sugar candles, chocolate, candied fruit and unit chewing gum and sometimes ice cream. The effect of sugar in take higher blood pressure, inflammation, weight grain, diabetes, and fatty liver disease are all linked to an increased risk for heart attack and stroke. Eating too much added sugar can have many negative health effects. An excess of sweetened foods and cookies, beverage can lead to weight gain blood sugar problem and an increased risk of heart disease among other dangerous condition.



Fig 1 sugar



## ❖ Sugarcane

Sugarcane is the source of sugar, molasses, and rum. It is a member of the grass family and is available in stalks.

- Made edible by boiling the stalks
- Ethanol is a byproduct of sugar production from sugarcane and is used as a biofuel alternative in countries like Brazil

## ❖ Mainly sugars are classified as.

- Raw sugar.
- Plantation white sugar.
- Refined sugar

## ❖ effect of sugar in confectionery

- Adds sweetness to confectionery products.
- To provide texture modifier the crystallization sugar
- Fillings, toffee and dragées.
- preservative



<b>Self-check 2</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I choose the best for the following question (4 point)**

1 which one is true about sugar is type?

A custard B icing C liquid D all E a & b

**Test II : Give Short Answer (each3point)**

1 what is the use of sugar in confectioner?

2 define sugarcane?

**Note: satisfactory rating- (≥5point)**

**Unsatisfactory-below 5 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



Information sheet. 4	<b>Effects of starches and glucose syrups in confectionery</b>
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### 1.1 effects of starches and glucose syrups in confectionery

Starch is a carbohydrate extracted from agricultural raw materials which is widely present in literally thousands of everyday food and non-food applications. It is the most important carbohydrate in the human diet. Because it is renewable and biodegradable it is also a perfect raw material as a substitute for fossil-fuel Diets high in refined starches are linked to a higher risk of diabetes, heart disease and weight gain in addition, they can cause blood sugar to spike rapidly and then fall sharply. Depending on production technology, starch syrup has a different carbohydrate composition: glucose, maltose, maltotriose, and other sugars. Customer-

Starchy foods are a good source of energy and the main source of a range of nutrients in our diet. As well as starch, they contain fibre, calcium, iron and B vitamins. Some people think starchy foods are fattening, but gram for gram they contain fewer than half the calories of fat.

Oriented allows producing molasses according to individual specifications of the Customer, different with technological and consumer properties:



Fig 1 starch ingredient

Confectionery glucose syrup is syrup made from the hydrolysis of starch. glucose is a sugar. maize (corn) is commonly used as the source of the starch in the US. In which case the syrup is called corn syrup, but glucose syrup is also made from potato and wheat, and less often from barley, rice and cassava. The effect of glucose is temperature and moisture. The effect of amylose content on insulin and glucose responses to ingested rice. Diet containing high amylose vs amylopectin starch effect on metabolic variable in human

✧ **type of starch, glucose**

- wheat
- maize (corn)
- rice
- potato
- grain
- modified



Fig 1 soy syrup



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test II choose the best answer (each 5 point)**

1 which of the following is type of starch?

- A. viscosity B. chocolate C. maize D. potato E c & d

2 which one is characteristics of starch

- A consistence B texture C color D viscosity E all

**Test II Test I: Short Answer Questions (each 4 point)**

1 defines the meaning starch?

2 what is the importance of glucose in confectioner?

**Note: satisfactory rating- (≥9 point)**

**Unsatisfactory-below 9 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_

score= \_\_\_\_\_

Rate = \_\_\_\_\_



<b>Information Sheet. 5</b>	<b>The effects of temperature and water on raw ingredients</b>
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### 5.1 The effects of temperature and water on raw ingredients

Temperature is a physical quantity that expresses hot and cold. It is manifestation of thermal energy. Increasing the temperature lowers the activation energy of a reaction. Increasing the temperature results in a higher rate of collision between particles. Increasing temperature produce more effective collisions with enough energy for a reaction to occur.in general, they tend to expand when their temperature increase

For example the same mass of boiling water occupies more volume at 100 degrees Celsius than at 20 degree Celsius. Therefore, increase temperature decrease density.

The water activity in confectioner is the ration between the vapor pressure of the confectioner itself, when in a completely undisturbed balance with vapor pressure of distilled water under identical condition water will have a big impact on the test, texture and shelf stability of confectioner product. by measuring and controlling product moisture can be critical for maintaining the right test and texture, and preventing quality issues during storage. In order to better understand these effects we need to measure the energy of water not simply the amount.



The

aim of the water to investigate how the moisture content of raw ingredient and the deification parameter, pressure and temperature, affect compression strength, Although water is the main ingredient in confectioner processing. it plays a very important role in manufacturing, product quality and shelf. Water interacts in confections through its ability to form hydrogen bonds with sugars and other confectionery components. As noted significant effects on such properties as boiling point elevation and water activity, two important aspects of confectioner manufacture and stability





Self-check 1	Written test
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I say true or false for the following question (each 4point)**

1. Moisture is a physical quantity that expresses hot and cold.
2. Temperature is essential parts of processing.

**Test II: Give Short Answer Questions (each 5 point)**

- 1 Identifies the effect of temperature?
- 2 Identifies the effect of water in on raw ingredient?

**Note: satisfactory rating- (≥9point)      Unsatisfactory-below 9 point**

*You can ask your teachers for the copy of the correct answer*

*Answer sheet*

Name \_\_\_\_\_ score= \_\_\_\_\_

Rate = \_\_\_\_\_



<b>Information sheet. 6</b>	<b>The effects of production processes on raw ingredient</b>
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### 6.1 The effects of production processes on raw ingredients

Production is the creation of production and service is an essential function in every firm. Production turns input such as natural resources the production effect is the difference in memory favoring words read aloud relative to word read silently during study. Cording to a current popular explanation, the distinctiveness of aloud words relative to silent word at the time of encoding underlies the better memory for the former. a well-planned production function will lead to good quality production, higher rate of production and lower cost per unit. The consumers will be benefitted from prices of goods and will get good quality products.

The availability of Quality Raw ingredient is a pre-requisite in the manufacture of Quality Food Products. With the need for increased process automation for achieving better productivity, consistency & cost reduction, a close control over raw material quality has become extremely important as Good Quality of Raw Material plays a significant role in achieving stable production of High Quality Food Products.



### 6.2.1 The following are advantage of production control:-

- better service to customer
- Less overtime work.
- need of smaller inventories of work- in process and of finished goods
- more effective purchasing
- more effective use of equipment
- less loss of time
- saving in the cost
- less work stoppages

The benefit of adopting technology in to manufacture practices includes an improvement of the quality of product throughout all stages of the manufacturing process.



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I. choose the best answer for the following question ( each 5 point)**

1 which of the following is the advantage of production control

- A. output B less loss of time C. goods D .all

2\_\_\_ is the creation of production and service is an essential function

- A. raw ingredient B. materials C. supplies D production

**Note: satisfactory rating (- ≥5point) Unsatisfactory-below 5 ponit**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_ score=\_\_\_\_\_

Rate =\_\_\_\_\_

**Answer Sheet**

Score = _____
Rating: _____

Name: \_\_\_\_\_ Date: \_\_\_\_\_



LG #17	LO #3 identify processing requirements for raw materials
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Instruction sheet
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:</p> <ul style="list-style-type: none"><li>• Identifying Specifications for production are identified.</li><li>• Identifying Implications for processing of raw materials are identified.</li><li>• Identifying Common problems associated with raw materials are identified according to workplace information.</li><li>• Identifying Actions required to address common problems are identified according to policies and procedures.</li></ul> <p>The effects of production processes on raw ingredients 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:</p> <ul style="list-style-type: none"><li>• Identify Specifications for production is identified.</li><li>• Identify Implications for processing of raw materials are identified.</li><li>• Identify Common problems associated with raw materials are identified according to workplace information.</li><li>• Identify storage and handling requirements for raw ingredients</li><li>• Identify Actions required to address common problems are identified according to policies and procedures.</li></ul>



- **Learning Instructions:** Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information Sheets
- Accomplish the Self-checks
- Perform Operation Sheets
- Do the “LAP test”



Information sheet. 1	<b>Identifying specifications for production and processing of raw materials</b>
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## **1.1 Identifying specifications for production and processing of raw materials**

Raw material specifications are an important aspect of the product development process. This section provides process flows maps for major raw material specification (RMS) processes as well as step-by-step instructions on how to perform RMS related tasks.

### **1.1.1 Important raw material and specifications**

Raw material (ingredient, processing aids, and packaging materials) are the foundation of finished food product. As such, they must meet regulatory requirement safe and legal for your intended use and your specification contribute to the functionality and quality of your process and product.

All raw materials used should be identified, described, and or chemically characterized as appropriate for their intended use in the manufacturing process.

These should be considered before their incorporation in the final product and at the time of the risk to safety assessment of the dietary ingredient. Raw material used in the process, including reagents, solvents, catalysts, processing aids, filtration, and purification aids, specialized equipment, reaction condition (e.g. temperature, time and other variables)



### 1.1.2 Specification for raw materials

- name of material
- description of the material, including biological, chemical and physical characteristics
- composition of the material including additives and processing aids
- country of origin
- method of production

### 1.1.3 Key raw material characteristics.

- **Research and Development;** Invents the finished product to meet the customer's expectations.
- **Quality** – Ensures that the programs and practices will result in finished product that is safe, is legal, and meets the company standards as well as specifications outlined.
- **Production (from receiving to deliver)** – Handles the raw materials and in-process and finished product in an appropriate manner (including equipment capability) to ensure the finished product is safe, is legal, specifications.
- **Sales** – Works with research and development and the customer to define and negotiate an acceptable product with an affiliated price point.





<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I:choose the best answer for the following question (each8 point)**

1. Which of the following is specification for raw materials?

- A country of origin B name of material C equipment D ingredient

2\_\_\_ is an essential part of in confectioner?

- A. raw ingredient B. production C. Purchasing D. none

**Note: satisfactory rating (- ≥4 point)      Unsatisfactory-below 4 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_



<b>Information sheet.2</b>	<b>Identifying Common problems according to workplace information</b>
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## 2.1 Identifying Common problems according to workplace information

The manufacturing industry is expected to continue to grow in the next few years, despite all the challenges. Apart from the instability in both national and international economic condition, there are also various internal challenge faced by manufacture.

Here are seven common challenges in the manufacturing industry along with the solution to overcome them.

- 1 overproduction (manufacturing items ahead of demand)
- 2 Inventory (excess material and information)
- 3 defects (production of off-specification product)
- 4 transport (excess transport of work in process or product)
- 5 motion(human movement that are unnecessary or straining)
- 6 over processing(process step that are not require)
- 7 Waiting (idle time and delays)

### ❖ Workplace information

- Standard Operating Procedures (SOPs)
- specifications
- production schedules and instructions
- manufacturers' advice
- standard forms and reports



There

are 4 problem of manufacture industry

**A .The manufacturing skills gap**manufacture:- one of the biggest manufacturing challenges in businesses face is the growing skills gap. The country has an aging workforce consisting mainly of baby boomers. As such, the manufacturing sector desperately needs skilled, younger workers.

### **B. Inventory and supply chain management**

Managing your supply chain and inventory is crucial to any manufacturing business. As companies look to ramp up production, they also need better, more agile manufacturing processes.

### **C. The Internet of Things**

The internet of things is opening up a world of opportunity for consumers and manufacturers alike. The popularity of fitness trackers and smart home devices shows no signs of slowing down. More and more customers expect to be able to connect their devices to products like fire alarms, doorbells, and refrigerators.

### **D. Incorporating robotics and automation**

Automating production lines can help manufacturing companies produce more in less time. But implementing automation and bearing the upfront cost of robotics poses specific challenges. The good news is those challenges are more than outweighed by the benefits.



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: choose the best answer for the following question (each 4 point)**

1 which of the following is common problem of manufacture industry

A raw ingredient B The manufacturing skills C aterial D all

2\_\_\_ is the creation of production and service is an essential function

B. raw ingredient B. materials C. supplies D production

3 one of the following is challenge of manufacture industry

A supplier B over process C motion D b &c E a

**Note: satisfactory rating (- ≥6point) Unsatisfactory-below 6 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_



<b>Information sheet- 3</b>	<b>Identifying actions required according to policies and procedures</b>
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### **3.2 Identifying actions required according to policies and procedures**

polices of raw material is quality First principle at every step in the supply chain from raw material procurement to product manufacturing, containers and packaging, sales, and safety assessment. Underpinning this approach is our commitment to supplying good products, which has guided us since the company was first founded. Our fundamental stance is to take full responsibility for quality through direct involvement of Group companies in every process.

### **3.3 Quality control**

Quality control has an extremely important role to play. Quality control aims at controlling variation to within a tolerable level by taking corrective actions. Statistical and non-statistical techniques are employed to measure, analyze and control variation in food products. Statistical process control, acceptance sampling and visual inspection are widely used in food and allied sectors. Maintenance of quality and manufacture of a standard confectionery should involve a very close control of raw materials, instrumentation, and statistical analysis of finished product and raw material Statistical evaluation with respect to finished product includes weight control, sensory evaluation and packaging tests. The quality standards are set by the quality control departments.

#### **3.2.1 Quality and control of raw material**

Preliminary testing is done to determine acceptability of delivery. Acceptance or rejection of the consignment is generally decided by the analytical chemists. This includes visual inspection. Raw material that fails to meet the prescribed standards is rejected. Sampling should be a representative of the bulk. On getting due approval for further processing from the concerned

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personnel, the containers are opened in batch rooms or stores and weighed amounts are sent for production process. Quality control is carried out in the following.

- Raw ingredients.
- Process of manufacture.
- Inspection of finished product.

### **3.1.1 police and procedure**

Work is carried out according to company policies and procedures:-

- regulatory and licensing requirements,
- legislative requirements,
- industrial awards and agreements
- Standard requirement
- Enterprise requirement
- Quality and safety procedure
- industrial awards and agreements



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test1 choose the best answer for the following question(4point)**

- 1 Which one is correct about Quality control is carried out?  
 A Raw ingredients B Process of manufacture C inspection finished product

**Test I Give short answer (each 4point)**

- 1 Define the meaning quality control?

**Note: satisfactory rating (- ≥4point)      Unsatisfactory-below 4 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_ score= \_\_\_\_\_

Rate = \_\_\_\_\_

**Answer Sheet**

Score = _____
Rating: _____

Name: \_\_\_\_\_ Date: \_\_\_\_\_



Information sheet-1	Identifying storage and handling requirements for raw ingredients
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### 1.1 Identifying storage and handling requirements for raw ingredients

Feed ingredients are dry before processing .It should be kept dry and cool and used on a first-out basis. As general rule the moisture percentage should be less 13% particular in humid and/or tropical area.

#### ❖ How can I handle food safely

Bacteria like staphylococci are found on the hair, skin, mouth, and nose and in the throat of health people. According to one estimate, nearly 50 percent of health food handlers carry disease agents that can be transmitted by food. The most important tool you have to prevent foodborne illness is good personal hygiene includes Control the time and temperature of ingredient



Fig 1 packed fruit





### How to handle raw ingredient

- storage area should be clean and free from contamination
- store in cool and dry place
- protect from direct sunlight
- palletize
- To store leave minimum 30cm from wall and 40cm from floor.
- Tropical conditions-29°C, 85-90% RH
- Cool storage-7°C, 10°C
- Cold storage—7°C

### Example of dry ingredient

- Flour
- sugar
- cocoa
- corn starch
- baking powder

This all dry ingredient are kept in appropriate condition. Dry area and free from moisture



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: choose the best answer for the following question (each 5point)**

1. Which of the following is raw ingredient handling?  
A cool storage 7oc, 10oC    B protect from direct sunlight  
C. Cold storage—7oC    D .all
2. One is true about storage area?  
C. availability of Temperature    B. availability of material    C. a &b    D all

**Note: satisfactory rating (- ≥5point)      Unsatisfactory-below 5 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_ score=\_\_\_\_\_

Rate =\_\_\_\_\_

**Answer Sheet**

Score = _____
Rating: _____

Name: \_\_\_\_\_ Date: \_\_\_\_\_



Information sheet 1	<b>Conducting the work according to Legislative environmental guidelines</b>
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### 1.1 Conducting the work according to Legislative environmental guidelines

This describes the interpreting of schedules and plans as well as a clear understanding of procedures to be undertaken and the targets to met.

When the requirements of the standards' met, employees understand the role their work

- plays, in maintaining quality output
- Motivated work force supports management in detecting, solving, correcting and preventing problems in the production area.
- Identification of the required resource

Doing any work related with modern confectioner production system we have to allocate the necessary resources which, proper and suitable to undertake the general confectioner work activities. The resource, which allocated used to achieve the confectioner work activity. Some of the resources are, materials, tools and equipment, , machinery, personal protective equipment,



### ✧ **Develop Health and Safety Program**

A good, sound health and safety program is an effective way to manage risks and productivity in your operation.

- Accidents are not only costly in human terms, but they can disrupt the flow of work and halt production.
- There are always hidden costs.
- The actual injury to an employee is only the “tip of the iceberg”. A good health and safety program should include the following components:

### ✧ **Written Health and Safety Policy**

This simple statement shows your commitment to health and safety for all employees. It only needs to be a few sentences or a short paragraph.

### ✧ **Written Safety Rules**

A set of basic rules for your operation as well as specialized safety rules for specific tasks, equipment or processes need to be developed. The list should not be long and unmanageable. Rules should be simple and easy to understand and may need to translate into a worker’s language. The rules should be reviewed with all new employees, as well as posted for all employees to see

### ✧ **Safety Director/coordinator**

You need to appoint someone to look after safety as a part of their job. You may also want to have a safety committee or safety representatives from both workers and management. This will keep safety out front all the time.

### ✧ **Employee Training**

- Employees should receive periodic training as necessary to review safety procedures.
- New employees should receive safety training both before and on the job.
- Close -calls or accidents should trigger an immediate review of procedures and safety with employees.

### ✧ **Workplace Inspection**

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- System of workplace inspection should be set up to review hazards and practices in the workplace.
- Any time that there is a new process introduced or new machinery installed, an inspection should take place
- Employees should be encouraged to report hazards, close calls or anything out of the ordinary that could lead to

#### ✧ **Injury Emergency Plan**

- There should be an emergency plan for any accident, fire, disaster or other unexpected event that may occur
- Employees should know what their responsibilities are during an emergency.
- Plan could include what to do during fires, power failures etc.

#### ✧ **Documentation is important**

- To keep records of training
- Safety meetings/concerns
- Corrective actions for accident investigations etc. as “Due Diligence”.

#### ✧ **Managing Waste material from dairy products processing like**

- Effluent from
  - Tanker washing,
  - Cleaning milk splits
  - Cheese whey
- Air emission gases
  - Milk powder dust
  - Refrigerant gases odor
- Solid Waste
  - Damaged product



- Out of date products

#### ✧ Occupational safety and health(OHS)

Occupational safety and health commonly referred to as occupational health and safety (OHS), occupational health, or workplace health and safety (WHS), is a multidisciplinary field concerned with the safety, health, and welfare of people at work. Occupational health is a multidisciplinary field of healthcare concerned with enabling an individual to undertake their occupation, in the way that causes least harm to their health.



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I:choose the best answer for the following question (each 4 point)**

1. Which one of the following are types of food business need to register most types of business will need to register including..? (4pts)
  - A. Shop, catering business run from home
  - B. Retailers
  - C. Food manufacturing business
  - D. All
  
2. Which one of the important food hygiene and safety considerations...?(4pts)
  - A Cleaning
  - B. Cooking
  - C. Chilling
  
3. ....a Hazard which include infectious microorganisms such as viruses and toxins? (4pts)
  - A) Chemical Hazard
  - C Physical Hazard
  - D Biological Hazard

**Note: satisfactory rating (- ≥6point)      Unsatisfactory-below 6 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_ score=\_\_\_\_\_

Rate =\_\_\_\_\_

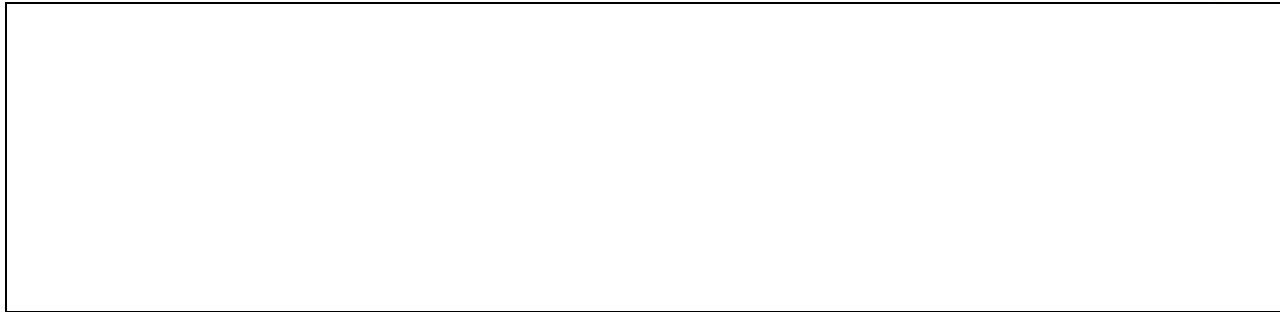


<b>LG #18</b>	<b>LO #4 Raw material receiving</b>
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<b>Instruction sheet</b>
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:</p> <ul style="list-style-type: none"><li>• Identifying amount and types of raw material in the ware house</li><li>• identifying amount and types of raw material use per day for production</li><li>• Requesting and receiving the required amount of raw material according to workplace information.</li></ul> <p>The effects of production processes on raw ingredients 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:</p> <ul style="list-style-type: none"><li>• identify amount and types of raw material in the ware house</li><li>• identify amount and types of raw material use per day for production</li><li>• Request and receive the required amount of raw material according to workplace information</li></ul> <ul style="list-style-type: none"><li>• <b>Learning Instructions:</b> Read the specific objectives of this Learning Guide.</li><li>• Follow the instructions described below.</li><li>• Read the information written in the information Sheets</li><li>• Accomplish the Self-checks</li><li>• Perform Operation Sheets</li><li>• Do the “LAP test”</li></ul>





<b>Information sheet 1</b>	<b>The amount and types of raw material in the ware house</b>
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### **1.1 The amount and types of raw material in the ware house**

Material is delivered to the warehouse once every week. When a truck arrives at the factory, an operator is called upon and the wares are offloaded with a forklift. If there already is a wire of the same material and size, the new materials is placed as close to the other wire as possible. If there are no wires of the same material and size in the warehouse, the new wire is placed in a free space. When all wires have been offloaded from the truck, notes are attached to the wires with information about the article number and the date the wire arrived.

#### **❖ Type of raw material**

- Caustic Soda.
- Malt dextrin Powder.
- Liquid Glucose.
- Caustic Soda Flakes
- cocoa
- sugar
- oil
- flour





### 1.1.1 The primary warehouse types

Modern warehouses can be centers for many forms of logistic activity. But still the facility can themselves be largely grouped in to four main warehouse types.

**Production warehouses** the main goal of production warehouse is to even out the demand for raw material, and perhaps also for semi-finished good.

- **Storage warehouse** this warehouse type is often used for long-term storage of finished good as part of company's outbound supply chain operation.
- **Fulfillment warehouse** often known as distribution center fulfillment warehouse differ considerably from other warehouse type.
- **Sorting warehouse** this warehouse type is not principally used for storage, but rather for receiving large inbound shipments and then breaking them down into smaller outbound loads. They might also be used for consolidating small inbound shipment in to large ones for dispatch to customer such as retail chain.



<b>self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: choose the best answer for the following question (each 3 point)**

- 1 Which one of the following are types warehouse  
 A. Storage warehouse B. Sorting warehouse C Fulfillment warehouse D all

- 2 one is true about warehouse type is not principally used for storage.  
 A storage B Sorting warehouse C Storage warehouse D material

**Note: satisfactory rating (- ≥3 point)      Unsatisfactory-below 3 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_ score=\_\_\_\_\_

Rate =\_\_\_\_\_



Information sheet- 2	The amount and types of raw material use per day for production
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### 1.1 The amount and types of raw material use per day for production

Raw material are material or substance used in the primary production or manufacturing of goods. Raw material also known as feedstock, unprocessed material, or primary commodity, is a basic material that is used to produce goods, finished product, energy, or intermediate material that are feedstock for future finished product

#### ❖ Type of raw material

Though all the raw material are obtained naturally, they can be divided in to three type based according to where it is derived from

- 1 **Plant/ tree-** based material like vegetable, fruit; flower, , resin, and latex are obtained from plants and trees.
- 2 **Animal based-** materials like leather, milk, yogurt
- 3 **Mining- based-** material like minerals, oil, coal, are obtained by mining the earth.

Apart from this, a manufacturing unit divides the raw **materials into 2 main** categories.

- **Direct raw materials** the primary component from which a finished product is made is called direct raw materials. For example cocoa is a direct raw material from which Confectionery like cake, ice- cream, cookies etc. are made. Another example is leather used for making purses, shoes, bags, etc.
- **Indirect raw materials** On the other hand, indirect raw materials are the materials that supplement in making the finished product from the direct materials. For example, the flour,



cocoa, sugar, etc. used in making chocolate. Confectionery like gum, cake, ice- cream, etc. is all indirect raw materials.



<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I : give short answer (each 5 point)**

- 1 Define the direct raw materials?
- 2 Define indirect raw materials?

**Note: satisfactory rating (- ≥5point)      Unsatisfactory-below 5 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



<b>Information sheet. 3</b>	<b>Request and receive the required amount of raw material according to workplace information</b>
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### 1.1 Request and receive the required amount of raw material according to workplace information

#### ❖ Receiving incoming material

Direct control over product quality begin when the starting material first arrive at the inward goods receiving, There are a number of raw material control that need to be put in place when goods arrive in to the receiving store.

#### ❖ method storage

- Separating receiving area from storage area.
- Protecting receiving bays from the weather.
- Checking that the identification is exactly the same on the container as it is on the paperwork.
- Examining each container and verifying that container is sealed, undamaged, and dean.
- Raising anon- conformance notice before accepting the material if any problem arises.
- Rejecting raw material when the content are exposed
- Identifying product needing storage(e.g. narcotics, temperature- sensitive products) and dealing

⊠ Raw material component and packaging shall, upon receipt be verified by examination of receipt of labeling and material to be:-

- Free from apparent physical damage and contamination





- The proper material correctly identify and
  - The correct quality, according to the matching site purchase order.
- ✧ Labeling for internal production control shall be completed after receipt and before sampling and should the following information:
- Name of the material per specification
  - The site material code, and
  - The site lot number
- ✧ **Workplace information**
- ❖ Standard Operating Procedures (SOPs)
  - ❖ specifications
  - ❖ production schedules and instructions
  - ❖ manufacturers' advice
  - ❖ Standard forms and reports



<b>self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: choose the best answer for the following (each 5 point)**

- Which one is true about receiving incoming raw material?  
A suppliers B goods C Separating receiving area from storage area D C b& a E all
- Which of the following is labeling for internal completed after receipt and before Labeling.  
A Name of the material per specification B the site material code,  
C The site lot number D Labeling

**Note: satisfactory rating (- ≥5point) Unsatisfactory-below 5 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_ score=\_\_\_\_\_

Rate =\_\_\_\_\_



<b>LG #19</b>	<b>LO #5. Raw material handling</b>
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<b>Instruction sheet</b>
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:</p> <ul style="list-style-type: none"><li>• Cleaning storage and handling area of raw material</li><li>• preparing raw material according to manufacturer's instructions and <b>OHS</b> standards</li></ul> <p>The effects of production processes on raw ingredients 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:</p> <ul style="list-style-type: none"><li>• Clean storage and handling area of raw material</li><li>• prepare raw material according to manufacturer's instructions and <b>OHS</b> standards</li></ul>
<p>3 <b>Learning Instructions:</b> Read the specific objectives of this Learning Guide.</p> <p>4 Follow the instructions described below.</p> <p>5 Read the information written in the information Sheets</p> <p>6 Accomplish the Self-checks</p> <p>7 Perform Operation Sheets</p> <p>8 Do the “LAP test”</p>



Information sheet. 1	Cleaning storage and handling area of raw material
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## 1.1 Cleaning storage and handling area of raw material

**1.1.1 Cleaning:** is the removal of all visible soil in an approved way with the use of mechanical and chemical action or both, so that all areas are cleaned and sanitized to a high standard. It is not only having a duster, cloth in hand and wiping surfaces. It may include real activities too. It requires a comprehensive understanding of different surfaces and the best tools and solutions to clean them to preserve the long life of those surfaces.

### Cleaning agent



**Fig 1 cleaning agents**



**Fig 2 All-purpose cleaner**



## 1.2 .Raw material handling

- storage area should be clean and free from contamination
- store in cool and dry place
- protect from direct sunlight
- palletize
- to store leave minimum 30cm from wall and 40cm from floor.

### 1.2.1 Handling and storage area of raw material

Handle your raw materials safely and ensuring that standards are sustained. The most important aspect of proper storage. All containers should be properly sealed and kept in either their original container or an appropriate container for their hazard class. Different raw material should never be mixed, even if they are similar types of materials. Product containers should be returned to their designated place when not in use. In addition, the dates of all products should be known, and old unused products should be safely disposed. Consider. Proper documentation, training, location, organization, handling, and maintenance of your raw material storage protocol will eliminate risks and ensure safety in your operations.

### 1.2.2 Importance of proper storage of tools and equipment

- It is an important factor for safety and health as well as good business.
- Improves appearance of general-shop and construction areas.
- Reduces overall tool cost through maintenance.
- This also ensures that tools are in good repair at hand.
- Teaches workers principles of (tool) accountability

### 1.2.3 Pointers to follow in storing tools and equipment:

- Have a designated place for each kind of tools.
- Label the storage cabinet or place correctly for immediate finding.
- Store them near the point of use
- Wash and dry properly before storing. .



- Put frequently used items in conveniently accessible locations.
- Gather and secure electrical cords to prevent entanglement or snagging.
- Cutting boards should be stored vertically to avoid moisture collection.
- Metal equipment can be stacked on one another after drying such as storage dishes and bowls.
- Make sure the areas where you are storing the equipment are clean, dry and not overcrowded.



<b>self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I : choose the best answer for the following question (each 4 point)**

1. What are the purposes of cleaning agents?
  - a. Health
  - b. Beauty
  - c. removing offensive odor
  - d. All
  
2. which of the following is true about raw material handling
 

A store in cool and dry place    B storage    C customer    D ingredient

**Test II: Give Short Answer Questions ( each 4 point?)**

1. What is the advantage of clearing equipment?
2. How to handle the material??
3. List and define all cleaning agents

**Note: satisfactory rating (- ≥10 point)                  Unsatisfactory-below 10 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_ score= \_\_\_\_\_  
 Rate = \_\_\_\_\_



<b>Information sheet.-2</b>	<b>Preparing raw material according to manufacturer's instructions and OHS standards</b>
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## **1.1 preparing raw material according to manufacturer's instructions and OHS standards**

### **1.1.1 raw material**

Oil	yeast
Maize	vanilla
Honey	food color
Salt	cinnamon
Butter	baking powder

The milled cake flour may be bleached with chlorine and this result in a drop in flour value. Such bleached flour is called high ration cake flour. Cakes from bleached flours are more tender and less likely to collapse and have better crumb color, finer grain and, often, greater volume.



**Fig 1 cake flour**





Sugars are used primarily as sweeteners in cakes as well as in other sweet goods. In cake making, sugar also has a softening effect on the gluten in flour, resulting in tender texture



**Fig2 sugar**

Fats are the primary enriching ingredient in cakes. The functional properties of fats with respect to cake making lie in its shortening, creaming and emulsifying effects on cake batters.



**Fig 3 shorting**



Vegetable oils: These are blends of oils from vegetable. Sources refined in the same way as shortening. The difference only in that they are liquid at normal temperature. Vegetables oils are used mostly in chiffon cake production.



**Fig 4 vegetable oil**

#### ✧ **Occupational safety and health(OHS)**

Occupational safety and health commonly referred to as occupational health and safety (OHS), occupational health, or workplace health and safety (WHS), is a multidisciplinary field concerned with the safety, health, and welfare of people at work. Occupational health is a multidisciplinary field of healthcare concerned with enabling an individual to undertake their occupation, in the way that causes least harm to their health



#### ✧ **Management system of occupational safety and health**

- OHS manual
- Including relevant policies and procedure
- OHS recording form
- Comprehensive collection of checklist, form and registers to assist you in managing your system.
- Document control
- Control document structure, referencing all policies checklist, forms and registers.
- Customizing instruction. Easy to follow tips on how to customize the document with your business details, add your logo etc. a useful guide to assist you in implementing your OHS management system



<b>self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Give Short Answer (each 4 point?)**

1. What is the advantage of using raw material?
2. How to prepare raw material??
- 3 How to manage the raw material?

**Note: satisfactory rating (- ≥4 point)      Unsatisfactory-below 4 point**

You can ask your teachers for the copy of the correct answer

Answer sheet

Name \_\_\_\_\_

score=\_\_\_\_\_

Rate =\_\_\_\_\_



<b>Operation sheet 1</b>	<b>Cleaning storage area</b>
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**Procedure**

- Step 1 on the light
- Step 2 Wear PPE
- Steps 3 - Identify hazards & manages risk.
- Step 4 - identify cleaning agent.
- Step 5 .- Avoid contamination of self, others & the environment.
- Step 6- Perform hand hygiene and polishing
- Step 7 dry the storage area.
- Step 8 return the cleaning agent in appropriate area.
- Step 9 - switch of the light.



**Operation sheet 2**

**Preparing raw material**

**Procedure**

Step 1 Wear PPE

Step2 identify the necessary confectioner items

Step3 separate dry ingredient from liquid

Step 4 kept in appropriate condition or dry and cool surface



<b>Operation sheet 3</b>	<b>Method of storage</b>
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### **Procedure**

Step 1 Separating receiving area from storage area.

Step 2 Protecting receiving bays from the weather.

Step 3 checking that the identification raw material

Step 4 Examining each container and conforming that container is sealed, and undamaged,

Step 5 Raising anon- conformance notice before accepting the material if any problem arises.

Step 6 Rejecting raw material when the content are exposed

Step 7 Identifying product needing storage (e.g. narcotics, temperature- sensitive products)  
dealing

Step 8 stores in appropriate area.



<b>LAP TEST</b>	<b>Performance Test</b>
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Name.....

ID.....

Date.....

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

**Instructions:** Given necessary templates, tools and materials you are required to perform the following tasks within **2** hour. The project is expected from each student to do it.

**Task-1 Cleaning storage area**

**Task 2 raw material handling**

**Task 3 storing raw material**





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