



Learning Objectives

- Identify the resources needed for food selection, purchase and storage.
- Know the techniques of food purchase and food standards.
- Know the appropriate methods of food storage.
- Learn different methods of cooking.
- Understand the impact of fast food on health.

The food industry varies from the simplest to the multifaceted that may involve public dining rooms, employee dining rooms, cafeterias, banquet service and room service. Such institutions serve various functions depending on the demands by the customers and vary from small to very large establishments.

Individuals working in food service management need a variety of skills that can be acquired through training in proper selection, purchasing, storage of foods, hospitality, marketing, sales and accounting.

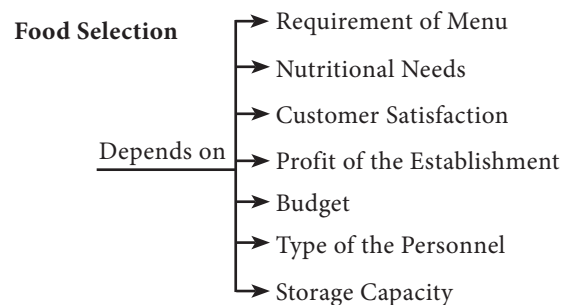
3.1 Selection, Purchase and Storage of Foods

3.1.1 Food Selection

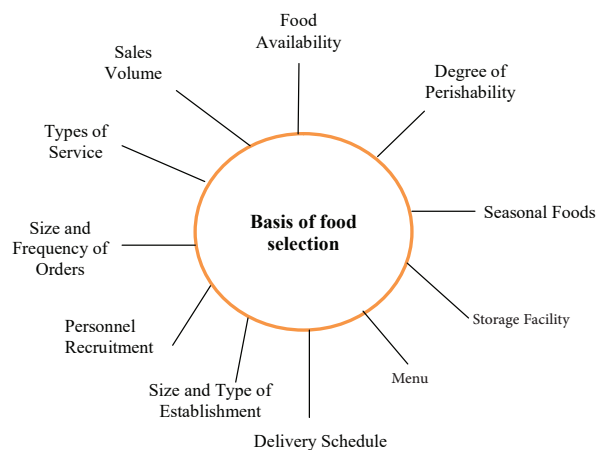
“Food selection is a choice of selecting a food which is good for the customer”.

Selection of food is very important in running a food service. Providing food in a manner which is satisfactory to customer is a challenging task.

Careful thought, planning and appropriate decision is very important in selection of food. Quality food can be selected when standards like FSSAI are followed.



▲ Figure 3.1 Significance of Food Selection



▲ Figure 3.2 Basis of Food Selection

Table 3.1 Food Quality Indicators

S.No	Fresh foods	Indicators of wholesomeness	Food standard
1	Cereals, pulses and legumes	Free from insect infestations and stone Even shape, colour and size of grains	FSSAI
2	Fruits and vegetables	Good natural colour, firm, evenly shaped, mature, free from dirt, blemishes	FSSAI
3	Poultry	Good overall shape and smell	FSSAI
4	Meat	Firm flesh, fine grain, age of the animal seen from skeleton colour of the muscle	FSSAI
5	Milk and milk products	Good colour, opaque, no sour, odour or taste, uncurdled	FSSAI
6	Fish	Free from bruises and bad smell	FSSAI
7	Egg	Smooth, velvety surface, translucent, no cracks	FSSAI
8	Fats	No rancidity, viscous, properly stored in containers	FSSAI

**DO YOU KNOW?****Choose fruits ripened in the sun**

Tomatoes ripened outdoor on the vine can have twice as much vitamin C as green house tomatoes.

FSSAI

Food Safety and Standards Authority of India (FSSAI) is an



▲ Plate 3.1 FSSAI

autonomous body established under the **Ministry of Health and Family Welfare**, Government of India. It has been established under the **Food Safety and Standards Act, 2006**.

The main objectives of FSSAI are to

- Ensure establishment of standards and practices that fully assure consumers interest and adhere to the highest degree of integrity possible.
- Create awareness among consumers in making informed choices regarding the food they consume.
- Establish a framework of food safety with defined responsibility of each food business operator.

3.1.2 Purchasing

“Purchasing is the formal process of buying goods and services”.

Table 3.2 Food Purchase Chart

S.No.	Types of food	Shelf life	Examples of food item	Frequency
1	Perishable	Short Life Liable to spoil or decay	Meat, fish, poultry, dairy products	Daily basis
2	Semi perishable	Limited shelf life	Potatoes, Onions, Garlic	Weekly basis
3	Non-perishable	Longer shelf life	Cereals, Flours, Spices, Canned foods, Nuts	Monthly basis

“Purchasing is the process of getting the right product into facility at the right time and place, plus the amount of goods at the right price and source”.

Every production operation has different purchasing procedures. But there is one rule that should always be followed.

Buy only as much as it is needed until the next delivery.

This will ensure that foods stay fresh and will create a high inventory turnover.

a. Important Functions of Food Purchasing in a Food Service

- Help in menu planning.
- Aid to predict profitability of an establishment.
- Evaluate the quality of the products.
- Identify the suppliers potential.
- Maintain customer satisfaction.
- Know the latest forms of technology, products or services available in the market place.

b. Methods of Purchasing

Depending on the type of establishment, the following purchasing methods are used.



▲ Figure 3.3 Methods of Purchasing

i. Direct Delivery

- Involves direct delivery of food and beverages from the manufacturers to the food service operation.

ii. Formal Buying

- Quotations are invited from the sellers, bids are made and the best one is selected.
- Generally adopted by large catering establishments.

iii. Wholesale Buying

- Contract is signed with a wholesaler for purchase of goods at a specific price for a future period.
- Suitable for large scale food service operation.



▲ Plate 3.2 Wholesale Buying

iv. Blanket Order Purchasing

- An agreement to provide a specified quantity of listed items for a period of time at an agreed price.

v. Stockless Purchasing

- The buyer does not keep the stocks of goods but the supplier keeps it.
- Then the buyers get the goods according to the needs.

vi. Auction Buying

- Manufacturers announce the sale of goods.
- Suitable for large food service operation.

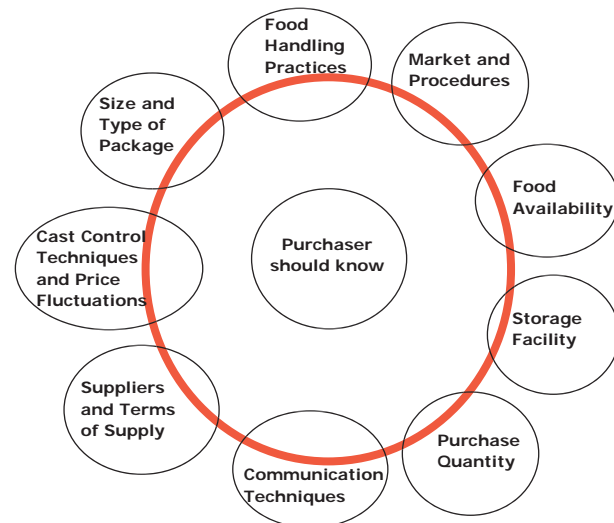
vii. Online Purchasing

- Ordering food from a local or food cooperative through a web page or app.

Guidelines for Purchasing Foods

- Check 'expiry' and 'best before' dates and purchase food accordingly.
- Buy only pasteurized milk and government inspected meat and poultry.
- Do not buy canned goods in tins that are bulged, dented, rusted or cracked.

c. Knowledge Required for a Food Purchaser



▲ Figure 3.4 Knowledge Required for a Food Purchaser

- Do not buy food from unrefrigerated displays that should be in a cooler.
- Do not purchase eggs that are cracked.
- Buy seasonal foods.
- Bulk buying is preferable.

3.1.3 Storage of Foods

“It is the process in which both cooked and raw materials are stored in appropriate conditions for future use without any spoilage”.

Golden rules for storing food.

- **Clean**
- **Cover**
- **Cool/Dry**



DO YOU KNOW?

Why potato is not stored in cold temperature?

Keeping a potato in the cold temperature will turn its starch into sugar more quickly.

Importance of food storage in a food service

- Preserve wholesomeness of the food.
- Protect quality of the food ingredients.
- Maintain expected shelf life of the product.
- Reduce wastage and spoilage.
- Control temperature.

- Prevent food contamination.
- Ensure safe for consumption.
- Stabilize the price.
- Future use.
- Cope with demand, production on a continuous basis.

In any type of food service operation, three different storages are essential.

Table 3.3 Types of Food Storage

S.No.	Type of storage	Foods to be stored	Temperature	Characteristics of storage place
1	Dry storage	Cereals, canned foods, flour, sugar, shortenings, spices, certain fruits and vegetables like bananas, onions and potatoes.	21°C	<ul style="list-style-type: none"> • Should be clean • Adequate ventilation with sufficient air circulation • Low humidity
2	Refrigerator storage	Fresh, cooked or partially cooked foods (milk, meat, vegetables)	0–7°C	<ul style="list-style-type: none"> • Regular cleaning of condenser coil should be done • Do not open the door frequently
3	Frozen storage	Meat, Ice cream, Butter, Cheese, Milk	–18°C	<ul style="list-style-type: none"> • Accumulation of ice should be cleared frequently • Proper air circulation is preferable.

Table 3.4 Ideal Ways of Storage

S.No.	Food ingredients	Storage
1	Cereals, pulses	Rigid sealed container or metal can
2	Fruits and other vegetables	Simple evaporative air cooled cabinets
3	Roots and tubers	Dry place for storage
4	Milk and milk products	Mechanical refrigerator
5	Egg	Egg cartons
6	Fish	Wooden or concrete acid resistant tanks
7	Meat	Hanging in carefully controlled environments
8	Fats and oils	Air tight container
9	Spices	Glass or plastic container
10	Canned foods	Cool and dry place
11	Frozen foods	Store at appropriate temperature after purchase.

3.2 Methods of Cooking

“Cooking is the art of preparing food for consumption commonly with the application of heat”

Cooking techniques and ingredients vary widely across the world, reflecting unique environmental, economical, cultural and traditional trends. Art of skill and training are needed for effective cooking.

3.2.1 Objectives of Cooking

- Cooking kills micro-organisms
- Sterilizes food
- Helps to keep food longer
- Softens the food
- Aids digestion
- Improves palatability and quality of food
- Introduces variety and
- Increases the availability of nutrients.

3.2.2 Cooking Methods

Heat is transferred to the food during cooking by conduction, convection and radiation. The manner in which heat is

applied to the food during cooking determines the type of cooking method used. The methods developed may be classified under three main heads:

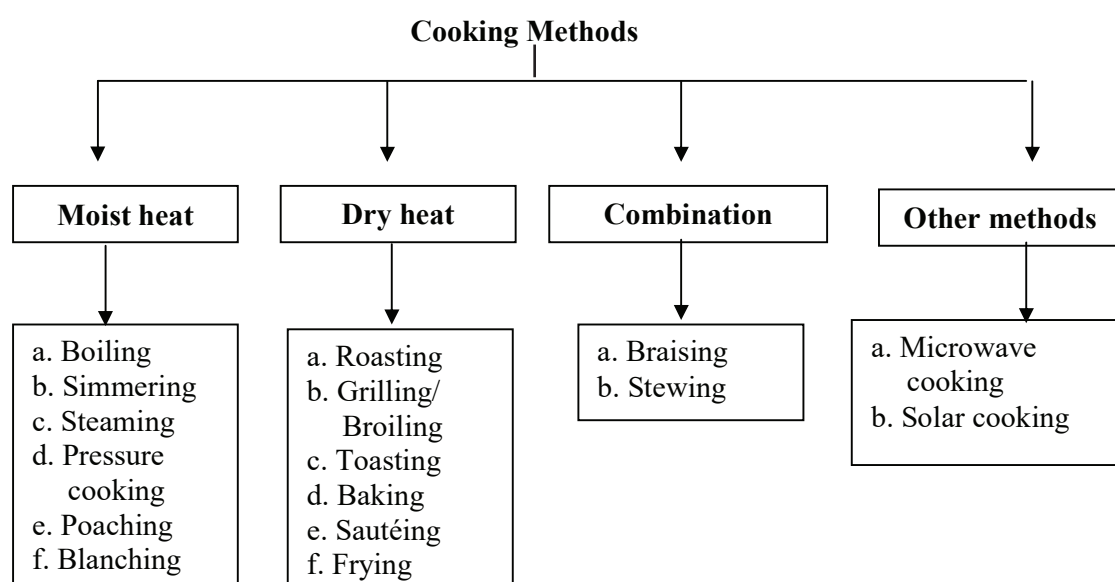
- **Moist heat:** Involves water and steam
- **Dry heat:** Involves air or fat
- **Combination Methods:** Combination of both moist heat and dry heat methods

3.2.3 Classification of Cooking Methods

I. Moist Heat Methods

a. Boiling: It is a method of cooking food by just immersing in water at 100°C and maintaining the water at that temperature till the food becomes tender. **Eg:** Rice, egg, dhal, meat, roots and tubers can be cooked by boiling.

b. Simmering: Food is cooked in liquid at a temperature just below the boiling point.



▲ Figure 3.5 Cooking Methods



▲ Plate 3.3 Boiling



▲ Plate 3.4 Simmering

c. Steaming: It is a method of cooking food in steam, generated from vigorously boiling water in a pan. **Eg:** Idli, Idiappam(string hopper) and vegetables are prepared by steaming.



▲ Plate 3.5 Steaming

d. Pressure Cooking: When steam under pressure is used, the method is known as pressure cooking and the equipment used is pressure cooker. In this method the temperature of boiling water can be raised above 100°C. **Eg:** Rice, dhal, meat, roots and tubers can be pressure cooked.



▲ Plate 3.6 Pressure Cooking

e. Poaching: This involves cooking in minimum amount of liquid at temperatures of 80°C–85°C that is below the boiling point. **Eg:** Egg and fish can be poached.



▲ Plate 3.7 Poaching



f. Blanching: In this method, food is immersed in boiling water for five seconds to two minutes depending on the texture of the food and put it in cold water. This helps to remove the skin or peel without softening the food.

Eg: Tomatoes can be blanched.



▲ Plate 3.8 Blanching

II. Dry Heat Methods

a. Roasting: In this method, food is roasted in a heated tawa or frying pan without covering it. But roasting can be done with or without any medium of cooking.

Eg: Groundnut can be roasted with or without oil.



▲ Plate 3.9 Roasting

b. Grilling/Broiling: Grilling or broiling refers to the cooking of food by exposing it to direct heat. In this method food is placed below or above or in between a red-hot surface.

Eg: Papads, corn, phulkas, chicken and fish.



▲ Plate 3.10 Grilling / Broiling

c. Toasting: In this method the food is kept between two heated elements to facilitate browning on both sides.

Eg: Bread slices can be toasted.



▲ Plate 3.11 Toasting

d. Baking: Baking is the method by which food is cooked by hot air. Country ovens and modern ovens are used for baking.

Eg: Bread, cake, biscuits and meat can be baked.



▲ Plate 3.12 Baking

e. Sautéing: It is a method of cooking or browning of food in a pan using a small quantity of butter, oil or ghee. **Eg:** Vegetables.



▲ Plate 3.13 Sautéing

f. Frying: It is the process of cooking food in hot ghee or oil. Food can be cooked either by shallow frying or by deep frying



▲ Plate 3.14 Frying

- Shallow frying means frying in little oil. **Eg:** Omelette, cutlets.
- Deep frying means immersing food fully in hot ghee or oil.
Eg: Samosa, chips, Poori.

III. Combination of Cooking Method

a. Braising: It is a combined cooking method of frying lightly and stewing it slowly in a closed container.

Eg: Uppuma – Roasting and boiling, Cutlet – Boiling and shallow fat frying.

b. Stewing: It is a combination of sautéing and simmering. **Eg:** Meat stew.

IV. Other methods

a. Microwave Cooking: A magnetron tube is a source from where the electromagnetic radiation with high frequency wave cooks the food.

Food should be kept in containers made of plastic, glass or chinaware and



▲ Plate 3.15 Microwave Cooking

non-metallic containers. These containers are used because they transmit the microwaves but do not absorb or reflect them.

Eg: Cake can be baked in microwave oven.



DO YOU KNOW?

Do not try recipes that require a lot of water such as pasta in microwave because they do not cook well.

b. Solar Cooking: Solar cooking is a very simple technique that makes use of sunlight or solar energy.

Solar cooker consists of a well-insulated box which is painted black inside and covered with one or more transparent covers. These covers allow the radiation from the sun to come inside the box but do not allow the heat from the hot black absorbing plate to come out of the box.

Because of this, temperature up to 140°C can be obtained which is adequate for cooking. Solar cooking is free of scorching and oozing of contents.

Eg: Rice



▲ Plate 3.16 Solar Cooker

3.3 Effects of Cooking on Nutrients

Eating nutritious food can improve health and energy levels. The way of cooking food has a major effect on the nutrient contents. Exposure to heat, light or oxygen will alter the nutrients in food.

The following nutrients are often reduced during cooking.

- **Water Soluble Vitamin:** Vitamin C and vitamins B – thiamine, riboflavin, niacin, pantothenic acid, pyridoxine, folic acid and cyanocobalamin.

3.3.1 Guidelines for Nutrients Conservation

Conservation of nutrients means saving nutrients during the process of preparation and cooking of food.

To conserve nutrients in food items the following techniques can be practiced:

1. Wash vegetables before cutting
2. Cut vegetables into large pieces just before cooking
3. Scrape the peels of vegetable as thin as possible because vitamins and minerals are found just under the skin of the vegetables.
4. Soak dry pulses with enough water prior to cooking.
5. Use just enough water for cooking.
6. Cooking in a pan which has a well-fitting lid avoids nutritional loss.
7. Do not overcook the food.



Table 3.5 Nutritional Changes during Cooking		
S.No.	Methods of Cooking	Nutritional changes
1	Boiling	<ul style="list-style-type: none">• Destroys vitamin C since it is water soluble and sensitive to heat.• Boiling fish helps to preserve omega-3 fatty acid.
2	Simmering	<ul style="list-style-type: none">• Thiamine, niacin and other B vitamins may be lost when meat is simmered and its juices run off.
3	Steaming	<ul style="list-style-type: none">• One of the best cooking methods for preserving nutrients, including water soluble vitamins, that are sensitive to heat and water.
4	Poaching	<ul style="list-style-type: none">• Poaching allows the proteins in food to denature slowly, without squeezing out moisture.
5	Grilling and Broiling	<ul style="list-style-type: none">• B vitamins may be lost.
6	Roasting and baking	<ul style="list-style-type: none">• Most vitamin losses are minimal except B vitamins
7	Sautéing	<ul style="list-style-type: none">• Cooking for a short time without water prevents loss of B vitamins.
8	Frying	<ul style="list-style-type: none">• Preserves vitamin B and vitamin C.• Increases the amount of fibre in potatoes.• Degrades omega – 3 fatty acid content
9	Microwave cooking	<ul style="list-style-type: none">• Preserves most nutrients.• Short cooking time.

8. Do not use baking soda while cooking.
9. Choose a suitable cooking method for each food items to preserve nutrients

3.3.2 Tips for Making Healthy Choice of Food

- * **Make Careful Menu Selection:** Order items with more vegetables and choose lean meats
- * **Drink Water with Your Meal:** Try adding a little lemon to water or ordering unsweetened iced tea instead of soda
- * **Special Order:** Order for vegetables and main dishes to be served without the sauces
- * **Eat Mindfully:** Chew food more thoroughly and avoid eating on the run

3.4 Fast food and Health Hazard

Fast foods are typically ready to eat foods containing high levels of saturated fats, salt or sugar and little or no fruit, vegetables or dietary fiber and are considered to have little or no health benefits.

Commonly Consumed Fast Foods are:

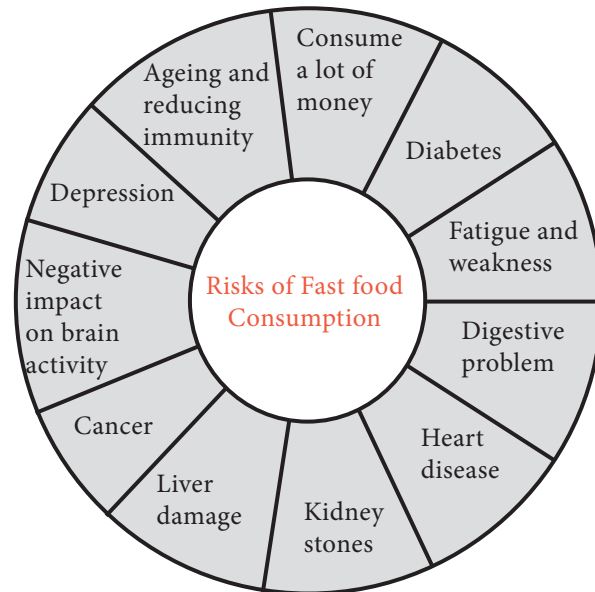
- Chips
- Candy Gum
- Pizzas
- Burgers
- Fried Foods
- Bhelpuri
- Chilly Mushroom
- Chilly Chicken



▲ Plate 3.17 Fast Food

Why fast foods are unhealthy

- Artificial colours and preservatives are used.
- Mostly prepared in an unhygienic environment.
- Addition of too much of any ingredient cause ill effect to health.
- Raw ingredients may be adulterated.



▲ Figure 3.6 Risks of Fast Food Consumption



- Reusing oils many times.
- Poor personal hygiene of food handler.

Key Words

Perishable	: Spoil / Decay
Blemishes	: Discolourations
Bruises	: An Injury
Viscous	: Thick and Sticky
Translucent	: Allowing Light
Rancidity	: Unpleasant Smell
Fluctuations	: To change Continually
Contamination	: Made Impure
Palatability	: Pleasant Taste
Denature	: To change the Nature

Linkages

<https://www.youtube.com/watch?v=ZN6--Xi5lKo>-Receiving & Put away

https://www.youtube.com/watch?v=_QuU6rs-n5Q&t=1s-Cooking Methods



Student Activity

Plan a visit to a retail grocery shop / wholesale grocery shop and departmental store and report on

- Selection
- Purchasing
- Storage of foods

Teacher Activity

- Prepare a questionnaire to conduct a survey to find out foods with ISO, FSSAI and BIS.

Questions

I. Choose the correct answers

- is the formal process of buying goods and services.
 - Selection
 - Storage
 - Purchasing
 - Processing
- Firm flesh is the quality indicator of.....
 - Meat
 - Fruits
 - Cereals
 - Egg
- Foods that are liable to spoil are called as
 - Staple
 - Semi perishable
 - Non-perishable
 - Perishable
- Potatoes can be purchased by basis
 - Weekly
 - Monthly
 - Daily
 - Once in two weeks
- Ordering food through a web page is called as purchasing.
 - Auction
 - Online
 - Formal
 - Direct
- Cereals can be stored by
 - Dry
 - Cold
 - Frozen
 - Refrigeration
- Ideal temperature for frozen storage is
 - 21°C
 - 7°C
 - 18°C
 - 5°C
- Concrete acid resistant tanks are used for storage.
 - Pulses
 - Milk
 - Fish
 - Spices





9. is the method by which food is cooked by hot air
- Blanching
 - Poaching
 - Baking
 - Boiling
10. is the example of combination of both moist and dry heat cooking methods.
- Boiling
 - Braising
 - Pressure cooking
 - Baking
11. Steaming can be used for preparing
- | | |
|---------|----------|
| a. Dosa | c. Poori |
| b. Idli | d. Vada |
12. Solar cooker consists of well insulated box which is painted with colour.
- | | |
|----------|---------|
| a. White | c. Red |
| b. Black | d. Blue |
13. Boiling fish helps to preserve fatty acid.
- Omega 3
 - Omega 6
 - Trans
 - Saturated
14. Cooking for a short time without water prevents loss of vitamins
- A
 - B
 - E
 - K
15. The ingredient present in fast food leads to high blood pressure
- Fenugreek
 - Artificial colours
 - Turmeric
 - Salt



II. Write in three lines (3 marks)

- What is food selection? Give any two reasons for selecting foods.
- Expand FSSAI and write their objectives.
- Tabulate the chart of food purchase.
- List the purchasing methods.
- Write any 3 guidelines for purchasing food in a food service
- What are the golden rules for storing any kind of foods?
- Tabulate the types of food storage.
- Classify the methods of cooking.
- Enumerate the objectives of cooking.
- Write short note on microwave cooking.
- What are the nutrients reduce while cooking?
- Give few examples of fast food.
- Write the tips for making healthy choice of food.





III. Write in a paragraph (5 marks)

1. Write the basis of food selection in a food service.
2. Tabulate food quality indicators.
3. List the importance of food purchasing in a food service?
4. What are the factors considered while purchasing?
5. Indicate the important functions of food storage.
6. Write short note on solar cooking.
7. Write the guidelines for conserving nutrients.
8. Why fast foods are unhealthy?



IV. Answer in detail (10 Marks)

1. Explain the methods of purchasing and suggest a suitable methods of purchasing perishables foods for a cafeteria.
2. Write on the nutritional changes during cooking.
3. Explain moist heat method with examples.
4. Highlight on dry heat method quoting examples.
5. Tabulate the ideal methods of food storage.
6. What is fast food? Give diagrammatic representation of risks of its consumption.

