L4 -Food, Nutrition and Health

Keywords

existence	Recommended Dietary Allowances (RDAs)	Integral part	bland	Macronutrients
enumerate	edible	delicacies	physiological	micronutrients
starch	cellulose	defecation	tubers	oxalates
phytates	inhibitors	thyroxine hormone	sedentary	

In-text Questions

In-text Questions 4.1

1. Define food.

   Answer: The term 'food' refers to anything that we eat and which nourishes the body. It is essential because it contains substances which perform important functions in our body.

2. List the three functions of food.

   Answer: The three functions of food are:

   i. Social Function: Sharing food with any other person implies social acceptance.

   ii. Psychological Function: Food satsfies the need for security, love and affection.

iii. Physiological Function: The four physiological functions performed by food are energy giving, body building, regulating body processes and providing protection against diseases.

3. Give one example (other than those given in text) of each function of food.

Answer: An example of each function of food:

Function of Food	Example
Social Function	Eating food together during daylong work shops forges new friendships.
Psychological Function	Going to a restaurant to celebrate passing 10^{th} examinations
Physiological Function	Wound getting healed due to nutrient-rich food eaten

In-text Questions 4.2

1. Answer the following questions

a) What is nutrition?

Answer: NUTRITION is the process by which food is taken in and utilized by the body.

b) List the main functions of nutrients.

Answer: The main functions of the nutrients are:

- Giving energy to the body
- Building the body cells and tissues
- Repairing the cells and tissues
- Protecting the body organs
- Helping in proper digestion and excretion

- Protecting against sickness

c) Give at least 2 examples of the following foods-

Answer: Two examples each are:

i. Food rich in proteins: Egg white and Rajma dal

ii. Food rich in carbohydrate: Banana and sweet potato

2. Indicate whether true or false. Give reasons for your answer.

a) The energy giving function is the major function of protein. (False)

Because Protein are needed in the body for body building and the main function of Carbohydrates is providing energy.

b) Dietary fibre is the unavailable carbohydrate.(True)

Because they add bulk to the stool and help in easy defecation process.

c) Combination of cereals and pulses in a meal improves the quality of protein. (True)

Because including two or more sources of vegetable proteins in each meal helps to improve the quality of proteins and their utilization.

d) Fats are liquid at room temperature.(False)

Because If a substance is liquid at room temperature it is called **oil** and if it is solid at the room temperature, it is known as **fat**.

In-text Questions 4.3

3. Classify the vitamins A,B,C,D,E and K as:

Water Soluble Vitamins: B and C

Fat Soluble Vitamins: A,D,E and K

4. State whether the following statements are ‘True’ or ‘False’, correcting the statement where ever necessary.

   i. Vitamin C is produced when the body is exposed to sunlight. (False)

   When the body is exposed to the sun rays, a substance is converted into vitamin D and transferred to the blood stream.

   ii. Vitamin A helps to keep our eyes healthy. (True)

   iii. Vitamin K plays a role in our feeling hungry. (False)

   Because Vitamin B Helps in digestion and improves appetite.

   iv. Vitamin E is necessary for clotting of blood. (False)

   Because Vitamin K is necessary for clotting of blood

   v. Vitamin A and B are necessary for strong and healthy teeth and bones. (False)

   Because Vitamin C is required for strong teeth and bones

In-text Questions 4.4

Answer the following questions–

1. What is the difference between iodized salt and normal salt?

   Answer: iodized salt is normal salt that has been sprayed with potassium iodate.

2. What is the importance of calcium?

   Answer: Calcium helps in Bone development, blood clotting and muscular coordination.

3. Name the two factors that enhance and that interfere with the absorption of iron in the body.

Answer: Vitamin C and protein facilitate absorption of iron and oxylates and phytates interfere with the absorption of iron.

4. Which mineral is important for hemoglobin formation?

   Answer: Iron is important for hemoglobin formation.

5. Bones in our body are made up of which mineral?

   Answer: Bones in our body are made up of calcium.

6. The lack of which mineral causes mental retardation in children?

   Answer: The lack of Iodine causes mental retardation in children.

In-text Questions 4.5

Tick mark (Π) the most appropriate answer:-

1. Nutrition is the process by which the food is taken in and
   a) digested in the body
   b) absorbed in the body
   c) utilized in the body ✓
   d) all the above
2. The macro nutrients are carbohydrates, fats and
   a) Proteins ✓
   b) vitamins
   c) minerals
   d) all the above
3. Micro nutrients are

a) vitamins, water

b) vitamins, minerals ✓

c) sugars and minerals

d) all the above

4. The amounts of nutrients required by different people are

a) the same

b) generally the same but occasionally different

c) at times the same and at times different

d) different ✓

In-text Questions 4.6

Test your word power -

Hope you have enjoyed learning about the Functions of food. While studying this lesson you must have come across some new words. Let us see how well you have understood their meaning. Given below are the words and their possible meanings. Choose the option closest to the real meaning of the word.

1. Nutrient : (a) tasty food (b) balanced diet (c) ✓ essential substance for life and growth (d) waste product
2. Edible : (a) poisonous (b) ✓ fit to be eaten (c) spiritual (d) part of building
3. Digestion : (a) ✓ process of converting food into substance used by body (b) growth (c) cooking food (d) chemical reaction
4. Macronutrient : (a) large quantity (b) visible to the naked eyed (c) fixed amount (d) ✓ substance required in large amounts

5. Legume : (a) cereal (b) ✓ dal (c) evergreen plant (d) cactus

Terminal Questions

1. List the food items you had for dinner and identify the energy giving and body building foods.

   Answer: See the following table:

Food Item	Energy Giving	Body Building
Chapati	✓	
Bowl of Dal		✓
Bowl of rice	✓	
Curd		✓
Cucumber	✓	

2. Define macronutrients and micronutrients.

Macronutrients	Micronutrients
• These are present in large quantities in foods. • Are required in large amounts by the body. • Carbohydrates, proteins, fats and oils are macronutrients	• Important nutrients which are present in small quantities in foods but are essential for our body are called micronutrients. • Deficiency of these can cause severe and life threatening conditions. • Minerals and vitamins are called micronutrients

3. List the functions of carbohydrates and proteins.

Carbohydrates	Proteins
• Provides energy • Acts as spare proteins • Helps in defecation	• Growth, maintenance and repair of tissues • Necessary for production of enzymes, hormones, antibodies and hemoglobin • Provide energy • Helps in clotting of blood

4. Are the nutritional requirements of your family members the same or different? Give reasons.

   Answer: Nutritional requirement of my family members are different .

   Nutritional requirement are influenced by many factors:

   - Age
   - Height/weight
   - Sex
   - Climate
   - Health
   - Occupation
   - Physiological condition
   - There will be variation in energy needs according to the activities.
   - Special requirement at pregnancy and lactation

Previous Year Questions

1. Give five reasons for including vitamin C in the diet. Name a fruit and a vegetable that you would include 6 marks

   Answer: The five reasons for including vitamin C in the diet are:

   i. Necessary for the formation of the sub stance that holds cells together

   ii. Needed for strong teeth and bones

   iii. Helps in the production of haemoglobin

   iv. Helps in the utilization of other nutrients in the body

v. Helps in fighting the germs causing diseases

a fruit and a vegetable that i would include to get Vitamin C are: Citrus fruits like amla, orange, lemon, guava, etc;

Green leafy vegetables, e.g. spinach, cabbage

2. Explain the functions of vitamin D in our body. 2

Answer: The functions of vitamin D in our body are:

i. Necessary for formation and maintenance of strong, healthy teeth and bones

ii. Helps in the proper absorption and utilization of calcium and phosphorus in the body

3. Enlist the signs and symptoms of iodine deficiency in adults and young children. 4

Answer: The signs and symptoms of iodine deficiency in adults and young children are:

i. ***goitre*** or enlargement of the neck region.

ii. mental retardation in children.

iii. Decreased academic performance of children.

4. Name the disease caused due to deficiency of iodine. Name *two* vegetables rich in goitrogens. 2

Answer: Iodine deficiency disorder is known as ***goitre*** or enlargement of the neck region. To avoid goitre, we must have iodine rich food sources in our daily meals.

Certain foodstuff like cabbage, cauliflower, radish, ladies finger, oilseeds etc., contain substances known as *goitrogens.*

5. Water is an essential constituent of our body. Enlist any *three* functions of water in our body. How much water should a person drink everyday? 4

   Answer: The *three* functions of water in our body are:

   i. Water helps in digestion, absorption and transportation of nutrients in the body.

   ii. It helps to excrete unwanted materials in the form of urine.

   iii. It maintains body temperature through perspiration.

   Normally, we need to drink 6-8 glasses of water everyday. Other forms in which we can receive water are milk, juice, kanji, etc.

6. List any *four* functions of carbohydrates in our body. Mention any *two* rich food sources of carbohydrates. 4

   Answer: The four functions of carbohydrates in our body are:

   i. Carbohydrates provide ***energy***

   ii. Carbohydrates are the ***main source*** of energy

   iii. Carbohydrates ***spare proteins*** for body building function

   iv. Dietary fibre increases the bulk in stool and ***helps in defecation***

   The food sources rich in carbohydrates are:

   - Cereals - wheat, rice, bajra, maize, etc.
   - Pulses - Rajma, channa, all dals
   - Roots and tubers - potatoes, sweet potatoes, beetroot and tapioca
   - Sugar, jaggery

7. Name a macronutrient and a micronutrient which help in the clotting of blood. 2

Answer: A macronutrient and a micronutrient which help in the clotting of blood are:

- Macronutrient: Protiens
- Micronutrient: Vitamin **K**

8. Explain the social and psychological functions of food with the help of *two* examples each. 4

   Answer: The social and psychological functions of food with the *two* examples each are:

Function of Food	Example
Social Function: Sharing food with any other person implies social acceptance	1. Marriage or birthdays, are celebrated by having feasts and serving delicacies 2. Eating food together during daylong work shops forges new friendships.
Psychological Function: Food satsfies the need for security, love and affection.	1. Mother prepares your favourite food or dish 2. Going to a restaurant to celebrate passing 10th examinations

9. Explain the psychological function of food with the help of any two examples. **[2]**

   Answer: Psychological Function: Food satsfies the need for security, love and affection. The examples are:

   - Mother prepares your favourite food or dish
   - Going to a restaurant to celebrate passing 10th examinations

10. Mention any two functions of Protein. **[1]**

    Answer: The two functions of protein are:

i. Needed for growth, maintenance and repair of tissues.

ii. Necessary for production of enzymes, hormones, antibodies, haemoglobin, etc.

11. Name any *two* body processes which are regulated by food. 2

Answer: The two body processes which are regulated by food are:

i. Our body temperature is maintained at 98.6 ^{o}F or 37^{o} C.

ii. Similarly, the heart beats are also maintained at 72 beats/minute.

12. What is food? Why is it essential? With the help of an example, show that food and emotional needs are inter-related. 4

Answer: The term 'food' refers to anything that we eat and which nourishes the body. It includes solids, semi-solids and liquids.

It is essential because it contains substances which perform important functions in our body.

We all have emotional needs, such as need for security, love and affection. Food is one way through which these needs are satisfied. For example, when your mother prepares your favourite food or dish, you feel that she loves you and cares for you.

13.

5	What do you understand by nutrients and micronutrients ? Give **one** example of each.	**2**

Answer: Nutrients are the chemical substances present in food and are responsible for nourishing the body. Nutrients are of two types:

i. Macronutrients: These are present in large quantities in foods and are also required in large amounts by the body. Carbohydrates, proteins, fats and oils are called macronutrients.

ii. Micronutrients: Nutrients which are present in small quantities in foods but are essential for our body are called micronutrients. Minerals and vitamins are called micronutrients.

14. | **13** | Why is it important to drink at least eight glasses of water daily ? Give four reasons. | **4** |
|---|---|---|

Answer: Water is vital for survival because it**:**

i. Forms about two-thirds of the body weight.

ii. Surrounds tissues and organs, and gives protection from shock.

iii. Helps in digestion, absorption and transportation of nutrients in the body.

iv. Helps to excrete unwanted materials in the form of urine

v. Maintains body temperature through perspiration.