

Exercise - 01

Multiple choice questions

- Which of the following food stuffs is rich in sugar?
(1) Honey (2) Ghee
(3) Eggs (4) Fish
- Which of the following foods provide energy?
(1) Carbohydrates (2) Fibres
(3) Vitamins (4) Minerals
- Wheat is a good source of –
(1) fats (2) proteins
(3) vitamins (4) carbohydrates
- Deficiency of which mineral causes goitre?
(1) Sodium (2) Iron
(3) Potassium (4) Iodine
- Iodine is used to test the presence of _____ in the food.
(1) proteins (2) minerals
(3) starch (4) fats
- Deficiency of iron leads to –
(1) Anaemia (2) Goitre
(3) Beriberi (4) Rickets
- Citrus fruits are rich in –
(1) Fats (2) Vitamin C
(3) Proteins (4) Starch
- Deficiency of which vitamin causes night blindness?
(1) Vitamin - A (2) Vitamin - D
(3) Vitamin - E (4) Vitamin - K
- Deficiency of which vitamin causes Beriberi?
(1) Vitamin - D (2) Vitamin - A
(3) Vitamin - B1 (4) Vitamin - K
- Vitamins and minerals are –
(1) Protective foods
(2) Body-building foods
(3) Energy-giving foods
(4) Both (2) and (3)

True or False

- Butter and ghee are rich in fats.
- Vitamin D is easily destroyed during cooking.
- Obesity is a condition caused by eating excessive food rich in fats.
- Iodine solution is used to test the presence of proteins in food.
- Anaemia is caused due to deficiency of iron.

Fill in the blanks

- The components of food are ____, ____, ____, ____, ____, and ____.
- Starch is a type of ____.
- Potato is rich in ____.
- Soyabeans are rich in ____.
- Pulses are the source of ____.
- ____ and ____ are the sources of carbohydrates in our diet.
- Proteins of animal origin are found in ____, ____, and ____.
- Energy-giving foods are ____ and ____.
- Protective foods are ____ and ____.
- Body-building foods are ____.
- ____ helps in building healthy bones and teeth.
- Deficiency of iron causes ____.
- Carrots are rich in vitamin ____.
- Our body needs ____ litres of water every day.
- Water makes up about ____ percent of the total weight of an adult.

1. Match the column

| Column - I | | Column - II | |
|------------|---------|-------------|---------|
| (1) | Starch | (a) | Glucose |
| (2) | Protein | (b) | Pulses |
| (3) | Fat | (c) | Potato |
| (4) | Sugar | (d) | Calcium |
| (5) | Mineral | (e) | Butter |

Answer Key

Multiple choice questions

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------|---|---|---|---|---|---|---|---|---|----|
| Answer | 1 | 1 | 4 | 4 | 3 | 1 | 2 | 1 | 3 | 1 |

True or false

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

Fill in the blanks

1. Carbohydrates, proteins, fats, minerals, vitamins, fibres, water
2. carbohydrate 3. Starch 4. Proteins
5. Proteins 6. potato, wheat 7. meat, milk, fish
8. carbohydrates, fats 9. vitamins, minerals
10. proteins 11. Calcium 12. Anaemia
13. A 14. 2-3 15. 70

Match the column :

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

Exercise - 02

Very short answer type questions

1. List the different components of food.
2. Why are carbohydrates important to us? Name the two types of carbohydrates.
3. Why are fats important to us? Name any five fats rich food sources.
4. What is the function of proteins in the body? Name any four protein rich food sources.
5. Name the chemicals used to test the presence of proteins in food.
6. Name any two minerals and write about their importance in the body.
7. Which mineral does each of the following foods supply?
(i) Seafood (ii) Milk
(iii) Table salt
8. Name some food items rich in calcium.
9. Name the sources of food rich in vitamin A.
10. Name the diseases caused by the deficiency of -
(i) Vitamin A (ii) Iron
(iii) Vitamin C

Short answer type questions

1. Why are proteins an important part of the diet?

2. Give three sources each of carbohydrates, proteins, fats, vitamins, minerals, starch and dietary fibre.
3. Why should you not eat only one type of food?
4. If you consume only rice and potato in your diet, how will it affect you?
5. Why should we include vitamins in our diet?
6. Why is water necessary for our body?
7. How is roughage important to us?
8. What are the advantages of cooking food?
9. What do you mean by malnutrition?
10. What are deficiency diseases? Give two examples.

Long answer type questions

1. How can we test the presence of protein in food?
2. Explain the three major groups of foods.
3. Write a short note on protective food.
4. What is a balanced diet? Why is it necessary to include different foodstuffs in the diet?
5. Explain different types of diseases caused by deficiency of vitamins and minerals.

Exercise Solution - 01

Multiple choice questions

1. **Option (1)**
Honey is rich in sugar.
Ghee = fats
Eggs, Fish = proteins
2. **Option (1)**
Carbohydrates provide energy.
Vitamins and Minerals are protective food.
Fibres helps our body get rid of undigested food.
3. **Option (4)**
Wheat is a rich source of carbohydrate as it provides more amount of energy.
4. **Option (4)**
Iodine deficiency causes goitre.
Sodium, Potassium - help in muscle working. Iron helps in Haemoglobin and RBC formation.
5. **Option (3)**
Starch in the food can be tested by iodine solution.
6. **Option (1)**
Deficiency of iron leads to anemia. This mineral helps in the formation of RBC and haemoglobin.
7. **Option (2)**
Vitamin C is present in citrus fruits. Amla, tomatoes, guava are rich in vitamin C.
8. **Option (1)**
Deficiency of vitamin A causes night blindness. There is dryness of eyes and improper vision.

9. **Option (3)**
Vitamin B₁ deficiency causes Beriberi.
10. **Option (1)**
Vitamins and minerals are protective foods.
Body building food = Proteins
Energy giving food = Carbohydrates, fats

True or False

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

Fill in the blanks

1. Carbohydrates, proteins, fats, minerals, vitamins, Roughage, water
2. Carbohydrate
3. Starch
4. Proteins
5. Proteins
6. Potato, wheat
7. Meat, milk, fish
8. Carbohydrate, fat
9. Vitamins, minerals
10. Proteins
11. Calcium
12. Anaemia
13. A
14. 2 - 3
15. 70

Match the columns

1. 1→(c), 2→(b), 3→(e), 4→(a), 5→(d)

Exercise Solution - 02

Very short answer type questions

1. Different components of food are carbohydrates, fats, proteins, minerals, vitamins, water and roughage.
2. Carbohydrates are important to us because they are energy giving compounds. Two types of carbohydrates are (a) sugar (b) starch.
3. Fats are energy giving compounds producing more energy than carbohydrates. E.g. milk products like butter, cheese, vegetable oils – groundnut oil, coconut oil, animal fats.
4. Proteins are body building foods. They help in growth, repair of body cells & tissue and protect as well as help to fight against infections.
E.g.: Pulses, Soyabean, Meat, Eggs, Cheese.
5. Copper sulphate, Caustic soda.
6. **(a) Calcium:** Required for making bones and teeth stronger.
(b) Iodine: Controls the functioning of thyroid gland.
7. (i) Seafood = Iodine
(ii) Milk = Calcium
(iii) Table salt = Iodine
8. Calcium is present in milk, curd, paneer, eggs.
9. Green leafy vegetables, fruits, milk, butter, egg yolk, carrots and fish oil are rich sources of vitamin A.
10. (i) Vitamin A = Night Blindness
(ii) Iron = Anaemia
(iii) Vitamin C = Scurvy.

Short answer type questions

1. Proteins are body building foods. Proteins help the body in its growth. It repairs of body cells and tissues. It protects and helps the body to fight against infections and regulates body functions.
2. Sources rich in -
(i) Carbohydrates: Potato, Sweet Potato, bread.
(ii) Proteins: Pulses, soyabean, meat.
(iii) Fats: Butter, cheese, vegetable oils.
(iv) Vitamins: Fish, citrus fruits, carrots.
(v) Minerals: Milk, green leafy vegetables, eggs.
(vi) Roughage: whole grains, pulses, potatoes.
(vii) Water: tea, milk, juice.
3. Our food is made up 7 essential components. All these components are required more or less in quantity by our body. A particular type of food may be rich in one or 2 components only and eating it alone cannot meet all the requirements in the body. Due to this, we can get diseased. So, we should avoid eating same type of food. Our daily diet should include all the basic components of food.

4. Rice and potato are carbohydrate containing food which is rich in starch. This food can provide energy but cannot help in protection from diseases. So, one must consume a diet where all the components of food are present so that our body can function properly.
5. Vitamins are protective foods. They are neither body building nor energy giving foods but are very important for proper functioning of our body. Most of them are supplied through the food. So, it is necessary for including vitamins in diet to ensure protection against diseases, keeping our eyes, bones, skin, teeth healthy.
E.g.: Vit A, Vit B, Vit C, Vit D.
6. 70% of our body weight is that of water. It helps in the transportation of various substances in an organism. It helps to maintain a constant body temperature. It helps in absorption of food and excretion of waste products from the body in form of urine and sweat. Our body needs 2-3 litres of water every day. It is obtained from drinking water, tea, milk, juices. Fresh vegetables and fruits also contain water.
7. Fibre is the substance that gives plants to their forms. Fibres that we eat are known as dietary fibres. Whole grains, pulses, potatoes, fresh fruits, vegetables are rich in roughage. It does not provide any nutrient to our body but is essential as adds bulk to our food. It also helps our body to get rid of undigested food.
8. Cooking improves the taste of food and makes it easily digestible. Cooking also kills harmful germs present in raw material.

9. The condition of nutrition in which the food is either in inadequate quantity or in excess, or it lacks in some essential nutrient is called malnutrition.
10. Diseases that occur due to lack of nutrients over a long period are called deficiency diseases. These diseases cannot be transmitted from one person to other.
Examples– Kwashiorkor, Marasmus

Long answer type questions

1. Aim

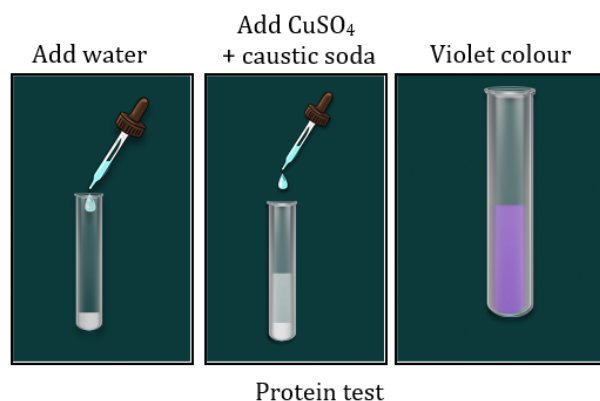
To show the presence of proteins in food.

Method

- (i) Take a small quantity of a food item for testing. If the food you want to test is solid, you first need to make a paste of it or powder it.
- (ii) Grind or mash a small quantity of the food item.
- (iii) Put some of this in a clean test tube, add 10 drops of water to it and shake the test tube.
- (iv) Now, by using a dropper, add two drops of solution of copper sulphate and ten drops of solution of caustic soda to the test tube.
- (v) Shake well and let the test tube stand for a few minutes.

Observations and conclusions

A violet colour indicates presence of proteins in the food item.



2. 3 major group of foods are -

(A) Energy giving foods: It includes carbohydrates and fats. They provide energy to our body. E.g. potato, sweet potato, vegetable oils, nuts, etc.

(B) Protective foods: It includes vitamins and minerals. They have no energy value, but they are required for proper functioning of our body. E.g. milk, cheese, green vegetables, fish, citrus fruits, carrots etc.

(C) Body building foods: It includes proteins. They help the body in its growth, repair of body cells and tissues.

E.g. Milk, Meat, eggs, cheese, pulses, soyabeans etc.

3. Protective foods include vitamins and minerals. They are required in small quantities and do not have any energy value. They help in protecting our body against diseases. They keep our eyes, bones, gums, skin, teeth healthy. They are obtained from the food we eat. E.g. Green leafy vegetables, fruits, milk, eggs, fishes, citrus fruits, carrots etc.

4. A diet that contains an adequate amount of different components of food required for the healthy functioning of our body is called a balanced diet.

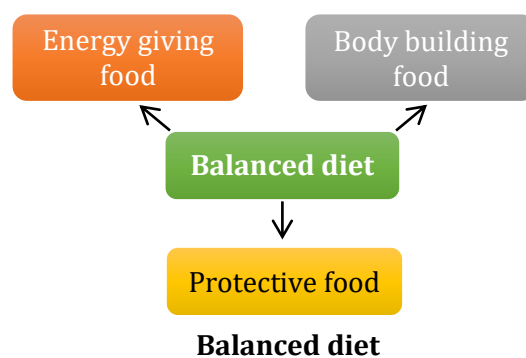
According to scientists, a balanced diet must include foodstuffs from the following four basic food groups:

(i) Milk group: Includes milk and milk products.

(ii) Meat group: Includes meat (chicken, fish, lamb, etc.) and meat substitutes (beans, peas, nuts, and seeds).

(iii) Fruit and vegetable group: Includes fruits and vegetables.

(iv) Grain group: Includes breads and cereals.



We must eat different food stuffs as they are rich in different types of components of food. They help our body to perform different functions.

5. The different deficiency diseases caused by deficiency of vitamins and minerals are stated below:

Vitamin/mineral: Vitamin A

Function: Keep eyes, hair and skin healthy.

Deficiency disease: Night blindness

Symptoms: Dryness of eyes, improper vision

Sources: Green leafy vegetables and fruits, milk, butter, egg yolk, carrots and fish oil

Vitamin/mineral: Vitamin B1

Function: Helps in digestion, maintains nervous system.

Deficiency disease: Beriberi

Symptoms: Weak muscles and very little energy to work

Sources: Eggs, whole grains, sprouts

Vitamin/mineral: Vitamin C

Function: Helps to resist infections and keeps teeth, gums and joints healthy.

Deficiency disease: Scurvy

Symptoms: Loosening of teeth, spongy and bleeding gums, slow healing of wounds

Sources: Citrus fruits such as orange, lemon, tomatoes, sprouts, amla and guava

Vitamin/mineral: Vitamin D

Function: Aids in the normal growth of bones in children.

Deficiency disease: Rickets

Symptoms: Weak bones, joint and bone deformities.

Sources: Milk, fish, eggs, butter and sunlight.

Vitamin/mineral: Calcium

Function: Required for making bones and teeth harder.

Deficiency disease: Bone and tooth decay

Symptoms: Weak bones, tooth decay

Sources: Dairy products and eggs

Vitamin/mineral: Iodine

Function: Controls functioning of thyroid gland.

Deficiency disease: Goiter

Symptoms: Glands in the neck appear swollen, mental disability in children

Sources: Fish, green leafy vegetables and salt

Vitamin/mineral: Iron

Function: Helps in the formation of RBC and haemoglobin.

Deficiency disease: Anaemia

Symptoms: Weakness

Sources: Green leafy vegetables like spinach and fruits like apple and pear.