


Subject – Science

Class- 7

Topic – chapter-1

Instructions:- Do in your science notebook.



### Exercise

(Use Cordova Smart Class Software on the smart board in class to do these exercises.)

**A Tick (✓) the correct options.**

- Which element is found in protein?
 

(a) calcium (Ca)	<input type="radio"/> (b) magnesium (Mg)
(c) boron (B)	<input checked="" type="radio"/> (d) nitrogen (N)
- Which vitamin's deficiency causes night blindness disease?
 

(a) vitamin B	<input type="radio"/> (b) vitamin C
(c) vitamin A ✓	<input type="radio"/> (d) vitamin K

**B Fill in the blanks.**

- Deficiency of vitamin C in diet causes scurvy disease.
- Deficiency of vit B causes beriberi disease.
- Fat is insoluble in water.
- Water acts as a Med in the body.
- Fibrous substance called cellulose is found in food substances.

**C Short answer type questions**

- Define balanced diet. 16
- Write two functions of protein. 7

3. Write the names of two vitamins and disease caused by their deficiency. (3)

4. What is roughage? Give two examples. (1)

**D Long answer type questions**

1. Write down the names of major sources of energy and describe any two sources. (5, 8)

2. Why is balanced diet necessary for our body? (2)

3. Why are minerals necessary for our diet? -

4. Prepare a chart of weekly menu of MDM (midday meal) provided by your school. ✓

**E Activity**

1. Prepare a chart of food components, sources, impact, diseases caused by deficiency and excess of them and demonstrate in the classroom.

2. Do a role play on a disease caused by deficiency of food components with the help of teacher. "Come, keep the disease away" prepare an article on it and do act.

**ADDITIONAL QUESTIONS FOR PRACTICE**

**A Tick (✓) the correct options.**

1. Which component of food is necessary for repair of tissues and overall growth of our body?

(a) carbohydrates

☒ (b) proteins ✓

(c) fats

☐ (d) vitamins

2. Which of the following is/are good source(s) of proteins?

(a) beans

☐ (b) pulses

(c) nuts

☒ (d) all of these ✓

3. Which one is a source of fat?

(a) soya bean oil ✓

☐ (b) apple

(c) wheat

☐ (d) rice

4. \_\_\_\_\_ help in the absorption of vitamins in the intestine.

(a) Fats ✓

☐ (b) Proteins

(c) Carbohydrates

☐ (d) Minerals

5. Which of the following vitamins is necessary for normal growth of bones and teeth?

(a) vitamin A

☐ (b) vitamin B

(c) vitamin C

☒ (d) vitamin D ✓

6. Which of the following is/are a good source of vitamin C?

(a) milk

☐ (b) egg yolk

(c) meat

☒ (d) citrus fruits ✓

7. Kwashiorkor is a

(a) protein deficiency disease ✓

☐ (b) mineral deficiency disease

(c) vitamin deficiency disease

☐ (d) carbohydrate deficiency disease



**B Match the following.**

I. **Column A**

1. Vitamin B<sub>2</sub>
2. Vitamin B<sub>12</sub>
3. Vitamin K

**Column B**

- (a) skin disorders
- (b) haemorrhage
- (c) pernicious anaemia

II. **Column A**

1. Iron (C)
2. Iodine (D)
3. Calcium (A)
4. Fluorine (B)

- Column B**
- (a) bone and tooth decay
  - (b) dental caries
  - (c) anaemia
  - (d) goitre

**C Fill in the blanks.**

1. Plants store energy in the form of starch.
2. A growing child needs more Nutrient than an adult. Protein
3. Roughage slows the absorption of sugar in the blood.
4. Roughage does not allow food to stick to the Intestine.
5. Human body contains about 70% water by weight.
6. Water regulates the temperature of our body by sweating.
7. The food that we eat during the whole day is called our Diet.
8. Kwashiorkor is common among children of one to five years of age.

**D Short answer questions**

1. Name the main components of food. 5
2. Name two simple carbohydrates. glucose & fructose
3. Name three sources each of—  
 (a) Plant fat (b) Animal fat (a) soya bean oil (b) meat  
groundnut oil milk  
walnut cheese
4. Why should we avoid fat-rich foods? because
5. What is PEM? Which deficiency disease is caused due to PEM? marasmus
6. Why do we need to have iodine in our diet? because deficiency of iodine we suffered from Goitre.

**E Long answer questions**

1. How will you test the presence of carbohydrate in a food sample? activity 1
2. Write an activity to test the presence of proteins in the given food sample. act. -2
3. Why are carbohydrates and fats necessary in our diet? because 6,8
4. What is the role of water in our diet? 11
5. (a) What are deficiency diseases? 12  
 (b) Name three mineral deficiency diseases. Also, write their symptoms. 14
6. What are the symptoms of marasmus? 13

## Chapter 1: Components Of Food

### Multiple Choice Questions

Page No. 7

1. (c)                      2. (a)

### Multiple Choice Questions

Page No. 10

1. (b)                      2. (c)

### Multiple Choice Questions

Page No. 12

1. (d)                      2. (c)                      3. (a)

### Multiple Choice Questions

Page No. 15

1. (b)                      2. (a)                      3. (a)

### EXERCISE

#### A. Tick (✓) the correct options.

1. (d)                      2. (c)

#### B. Fill in the blanks.

1. scurvy                      2. vitamin B                      3. insoluble  
4. solvent                      5. roughage

#### C. Short answer type questions

1. The diet that contains adequate amount of all the essential nutrients, roughage and water for the proper growth and development of the body is called a balanced diet.
2. Two functions of proteins are :  
(i) They help in body's growth and development.  
(ii) They are necessary for repair of tissues in the body.

3.

S. No.	Vitamins	Deficiency diseases
(i)	Vitamin A	Night blindness
(ii)	Vitamin B <sub>1</sub>	Beriberi

4. The fibrous indigestible material present in our food is called roughage. Examples are salad and corn.

#### D. Long answer type questions

1. The major sources of energy are carbohydrates and fats. Proteins also provide energy in the absence of carbohydrates and fats.
- (i) **Carbohydrates:** They are the main sources of energy for our body. They consist of carbon, hydrogen and oxygen elements. There are many types of carbohydrates. The two main types are sugars and starch.

- (ii) **Fats:** Fats give us more energy than carbohydrates. Fats are obtained from plants and animals. Fats are organic compounds found in cells that are insoluble in water. They are made of carbon, hydrogen and oxygen molecules.
2. Balanced diet is necessary for the proper growth and development of our body. When any of the nutrients is less than the required amount in our diet, it causes a disease.
  3. Minerals are the nutrients required by our body for its proper normal growth and good health. Thus, minerals are necessary for a balanced diet.





**A. Tick (✓) the correct options.**

- |        |        |        |        |        |
|--------|--------|--------|--------|--------|
| 1. (b) | 2. (d) | 3. (a) | 4. (a) | 5. (d) |
| 6. (d) | 7. (a) |        |        |        |

**B. Match the following.**

- |             |        |        |        |
|-------------|--------|--------|--------|
| (I) 1. (b)  | 2. (c) | 3. (a) |        |
| (II) 1. (c) | 2. (d) | 3. (a) | 4. (b) |

**C. Fill in the blanks.**

- |             |              |
|-------------|--------------|
| 1. starch   | 2. proteins  |
| 3. Roughage | 4. intestine |
| 5. 70%      | 6. Water     |
| 7. diet     | 8. one, five |

**D. Short answer questions**

- The main components of food are as follows:
 

(i) Carbohydrates	(ii) Proteins
(iii) Fats	(iv) Vitamins
(v) Minerals	(vi) Roughage (Dietary Fibres)
(vii) Water	
- The two simple carbohydrates are glucose and fructose .
- (a) Soya bean, peanut and walnuts      (b) Milk, *ghee* and butter
- We should avoid fat-rich foods as they are difficult for the body to digest. Excess fat is often stored as body fat. The excess fat stored in the body leads to obesity.
- Lack of carbohydrates, proteins and fats in the diet is called Protein Energy Malnutrition (PEM). Marasmus is caused due to PEM.

- We need to have iodine in our diet because deficiency of this mineral may cause goitre.

**E. Long answer questions**

- We can test the presence of carbohydrate in a food sample by using the iodine solution on the food items. Take the food sample and pour 2-3 drops of iodine solution on its cut surface. If it turns blue-black, then the food sample contains carbohydrate. If it does not turn blue-black, then carbohydrate is absent in it.

- To test the presence of proteins in a given food sample

**Things needed:** A boiled egg (white portion), copper sulphate solution, caustic soda solution, a test tube, a dropper and a test tube stand

**Preparation of copper sulphate solution:** Take 100 mL of water in a beaker. In this water, dissolve 2 g of copper sulphate. We get a blue-coloured copper sulphate solution.

**Method:**

- (i) Take pieces of a boiled egg (white portion) in a test tube.
- (ii) Add two drops of copper sulphate solution and ten drops of caustic soda solution in a test tube with the help of a dropper.
- (iii) Shake the test tube well and allow it to stand for a few minutes.

**Observation:** The content of the test tube turns violet.

**Conclusion:** The violet colour indicates the presence of proteins in the boiled egg (white portion).

- 3. Carbohydrates and fats are necessary in our diet because of the following reasons:
  - (i) Carbohydrates and fats provide energy for our body to carry out all its functions.
  - (ii) Carbohydrates function as stored food.
  - (iii) Carbohydrates are biofuels, keeping our body parts active.
  - (iv) Fat deposited below the skin protects internal organs of the body from external shocks.
  - (v) Fat deposited below the skin insulate our body and help to control our body temperature.
- 4. Water is needed by our body to perform many vital functions. Some of them are:
  - (i) It transports substances and nutrients inside our body.
  - (ii) It regulates the temperature of our body by sweating.
  - (iii) It helps our body absorb nutrients from the food we eat.
  - (iv) It acts as an important medium for most chemical reactions, occurring in the body.

5. (a) Diseases that are caused due to the lack of carbohydrates, proteins, minerals or vitamins, in our diet, are called deficiency diseases.

- (b) The three mineral deficiency diseases and their symptoms are :

S. No.	Minerals	Deficiency diseases	Symptoms
(i)	Iron	Anaemia (less haemoglobin produced in blood)	Weakness and fatigue, loss of weight, pale skin, loss of appetite
(ii)	Iodine	Goitre	Abnormal enlargement of the thyroid gland, retarded growth, mental disability
(iii)	Calcium	Bone and tooth decay	Weak bones, excessive bleeding of gums, stunted growth, tooth decay, weakness

6. Marasmus has the following symptoms :

- (i) Body becomes very lean and thin, and very weak such that the child may not be able to move.
- (ii) Skin becomes dry, thin and wrinkled.
- (iii) Ribs become very prominent.
- (iv) Sunken eyes
- (v) Unable to digest and absorb food and may suffer from diarrhoea