

**CBSE Test Paper 04**  
**CH-02 Sports and Nutrition**

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1. List down various non-nutritive components of diet.
2. Define Balanced Diet?
3. What are micro-nutrients?
4. What are vitamins?
5. Enlist the Fat Soluble Vitamins?
6. Write briefly about protein as an essential component of the diet.
7. Explain food myths.
8. Explain the role of carbohydrate in diet?
9. What do you mean by micro nutrients? Explain in brief about mineral as micro nutrients in detail.
10. Discuss in detail the elements of diet.

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**Answer**

1. (i) Artificial sweetener  
(ii) Colour compounds  
(iii) Preservatives  
(iv) Plant compounds  
(v) Water  
(vi) Flavour compounds
2. A diet which contains the proper amount of each nutrient, i.e. like carbohydrate, fat, protein etc is called Balanced Diet. A diet which consists of all the essential food constituents viz. protein, carbohydrates, fats, vitamins, minerals and water in correct proportion is called balanced diet. A balanced diet contains sufficient amounts of fiber and the various nutrients (carbohydrates, fats, proteins, vitamins, and minerals) to ensure good health. Food should also provide the appropriate amount of energy and adequate amounts of water.
3. Vitamins and Minerals are commonly referred to as micro-nutrients. They are called micro because our body needs only small quantities of them for survival. Various micro-nutrients are vitamins A, B, C, D, E and K minerals such as iron, calcium, magnesium iodine etc.
4. Vitamins are compounds of carbon which are essential for the normal growth and working of the body. They are required in very small quantities. The important vitamins are A, C, D, E, K and B-complex (B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, B<sub>8</sub>, B<sub>12</sub>). Vitamins are found in milk, butter, eggs, green vegetables, oil, nuts, fish, etc.
5. The Fat soluble vitamins are A, D, E and K.
6. Proteins are the basic structure of all living cells. These are complex organic compounds. Protein is a chain of amino acids that contain carbon, oxygen, hydrogen, and nitrogen.

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These are two types of proteins:

(i) Non-essential proteins

(ii) Essential proteins

All meat and other animal products are sources of proteins. The best sources are eggs, milk, meat, poultry, milk products, beans etc.

**Functions of Proteins:**

1. The cells of muscles and ligaments are maintained with protein.
  2. Proteins are needed for the growth and development of children.
  3. Proteins are the main components of muscles, organs, and glands.
7. There are various food myths specially prevailing in Indian, when to eat what how much and where to eat etc, things like that often confuse individuals, they are believed by people and now have scientific knowledge which says not to believe them.
1. Potatoes make you fat
  2. Fat free products will help you in losing weight
  3. Eggs increases cholesterol levels so avoid them
  4. Drinking while eating makes you fat
  5. Don't take milk immediately after eating fish
  6. Starve yourself if you want to loose weight
8. Carbohydrate: -
1. Carbohydrate is the main fuel to the body. It supplies energy and heat to the body.
  2. It helps in digestion and regulation of fat in protein metabolism.
    - a. It is composed of carbon, hydrogen and oxygen.
    - b. It helps in the metabolism of fat.
    - c. It is highly valuable when strong muscular work is undertaken.

**Sources :-**

**Starches** - roots, tubers & plant stem.

**Sugar** : It comprises 6 glucose, Maltose, Sucrose

**Cellulose** :- Consists fibrous substance like, fruits, vegetable cereals, banana, sugar

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cane, etc.

9. Minerals and vitamins are included in micro nutrients. Micro nutrients are required in very small amounts. The main function of these nutrients is to enable various chemical reactions to occur in the body,

**Minerals:-** Mineral are very essential in our diet. Four percent of our body weight is made up minerals. These are required for healthy teeth, bones and muscles. It is also used by body for various activities such as transmission of nerve, impulses formation of hormones and maintenance of heart beat etc.

**a) Macro Minerals: -**

**a) Calcium:** Calcium is among the top macro-minerals in terms of growth and development of our bones and teeth. It helps in blood clotting. Its deficiency may cause rickets. The sources are cheese, milk, orange, juice, eggs, green leafy vegetables and cereals.

**b) Potassium:** Potassium is one of the most required minerals in diet. It is helpful in keeping the nervous system and muscular system fir and active all the time. it helps in maintaining the amount of water in blood and tissues. Its main sources are banana, tomatoes, green leafy vegetables, beans etc.

**c) Sodium:** It helps in muscular activities. It also helps in transmission of nerve impulses. The sources are table salts, pickles and butter etc.

**d) Magnesium:** It repairs and maintains body cells. It is found in meat, brown rice, beans and whole grains etc.

**Phosphorus:** Phosphorus helps in the formation of bone and teeth. It keeps the muscles and nerve activities normal. The sources are egg, fish, liver, milk, and unpolished rice etc.

**Micro Minerals:**

**a) Iodine:** It produces the hormones for the thyroid gland. It is also significant for proper growth and development. Lack of iodine can cause goiter (swollen thyroid gland) and mental retardation. The sources are iodized salt, fish and sea food.

**b) Iron:** it is essential in the production of hemoglobin. Its deficiency causes anemia. The sources are meat, egg, dry fruits, spinach banana and greet leaf vegetables.

**c) Chromium:** it is essential in the production of hemoglobin. Its deficiency may cause diabetes. The sources are soya beans, black gram, carrot, tomato, groundnuts, bajra and barley.

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10. **Carbohydrate** : It oxidize to release energy. An average adult requires 12000 calories of energy per day. This is the main source of energy. They contain the elements of carbon, Hydrogen and Oxygen with chemical formula  $CHO_2$ . On an average 1 gram of carbohydrates give 4 calories of energy or burning. There are two types of carbohydrates i.e. simple carbohydrate and complex carbohydrates. We obtained the carbohydrates in the form of starch. It is found in rice, potato, yams, bread, cereals etc. It is also found from milk, sugar, sugarcane in the form of glucose fructose and sucrose.

**Vitamins:** Vitamins are complex compounds of carbon and essential for normal functioning of body. It is important for metabolism of fats and carbohydrates and helps to repair and maintenance of various tissues. Vitamins are natural substances found in plants and animals and known as Essential nutrients for human beings. Human body uses these substances to stay healthy and support its many functions. There are two types of vitamins: water-soluble and fat-soluble. Deficiencies of vitamins and minerals may be caused by disease states such as mal absorption.

**Proteins:** There are necessary for growth & repair of body tissues. It contains the elements carbon, Hydrogen, Oxygen, Nitrogen and sometimes sulphur. They are turned into amino-acids by our digestive system. There are 23 amino-acids out of these, 9 amino-acids must be available in the diet. These are used by the body to create blood, muscles, nails, skin, hair and internal organs. We can get proteins from milk, pulses, cereals, egg, cheese, meat and fish.

**Fats:** Fats contain carbon, oxygen and Hydrogen in the percentage of 76, 12 and 12 respectively. It keep us warm and given protection to organs. It also help in production of hormones one gram of fat on burning gives 9 calories of energy. Extra amount of fats are stored under the skin in the form of fatty acids. Two types of fatty acids i.e. saturated Fatty acid contain chain of carbon atom and unsaturated fatty acids.

**Minerals:** - Mineral are very essential in our diet. Four percent of our body weight is made up minerals. These are required for healthy teeth, bones and muscles. It is also used by body for various activities such as transmission of nerve, impulses formation of hormones and maintenance of heart beat etc.

Macro Minerals:- Calcium, Potassium, Sodium, Magnesium, Phosphorus

Micro Minerals: Iodine, Iron, Chromium