

GENERAL SCIENCE AND ABILITY

Date 5-1-24.

Q1) Write comprehensive note on "Balance Diet"?

BALANCED DIET:-

A diet which contains different types of food possessing the nutrients- carbohydrates, protein, fats, vitamins, minerals, and water in a proportion to meet the requirement of the body. Balanced diet achieved by eating variety of food. There is no single food with correct amount of all essential nutrients. Eating a balanced diet requires a certain amount of knowledge and planning. The basic composition of balanced diet is highly variable as it differs from country to country depending on the availability of food. Social and cultural habits, economic status, age, sex and physical activity of the individual largely influence ^{the} intake of diet. Balanced diet is an important part of maintaining good health, and can help you feel your best. This means eating a wide variety of foods in the right proportion, and consuming the right amount of food and drink to achieve and maintain a healthy body weight.

Q2) Deficiency of vitamins causes different human diseases some of which are given in the table below. Choose the correct type of vitamin from the box and write in front of each disease:

vit A.	vit B ₁	vit. C	vit. D	vit. E	vit. K
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Date _____

Disease caused due to lack of vitamin	Name of the vitamin
1. Poor night vision	Vitamin A
2. Bleeding gums	Vitamin C
3. Rickets in children	Vitamin D
4. Beri - Beri	Vit B ₁
5. Anaemia	Vitamin C/E

Q3) What is the significance of vitamins? Describe the sources, causes and deficiency of symptoms of fat soluble vitamins?

SIGNIFICANCE OF VITAMINS:-

* Vitamins are made up of carbon, hydrogen and oxygen.
* Vitamins are called micronutrients because they are needed in only very small quantities. They all have chemical names, but they are usually referred to by letters.

* Vitamins are essential to the body:

- To maintain health.

- To help prevent deficiency diseases such as Beriberi (weakened muscles, heart, nerves and digestive system) and rickets (softening of the bones).

- To regulate the repair of body cells.

- To help combat the ageing process.

- To help to process carbohydrates and release energy in the body.

FAT SOLUBLE VITAMINS:-

VITAMIN A:-

Sources:-

Yellow and orange coloured fruit / carrot / milk / fish etc.

Uses:-

Regulates growth, Promotes healthy skin, Maintenance of healthy tissues, Helps eye adapt to dim light.

Deficiency symptoms:-

Retarded growth malformed bones, long term - may lead to night blindness, Susceptibility to infection, Excess beta-carotene ^{carotene} may lead to liver and bone damage.

VITAMIN D:-

Sources:-

Sunlight, Mushroom, Egg yolk, Cheese, Fish etc.

Uses:-

Absorption and laying down of calcium and Phosphorus in bones and teeth, Regulates calcium balance between bones and blood, Prevents Rickets.

Deficiency symptoms:-

Rickets, Osteoporosis.

VITAMINE:-

Sources:-

Dry fruits, vegetables, milk etc.

Uses:-

Protects tissues against damage. Promotes normal growth and development. Helps in normal red blood cell formation.

Deficiency symptoms:-

Deficiency is very rare but it could affect the central nervous system, unhealthy skin and hair.

VITAMIN K:-

Sources:-

Green leaf vegetables, meat, vegetable oil, cereals etc.

Uses:-

Needed for blood clotting, which means it helps wounds heal properly. There is increasing evidence that vitamin K is also needed to help build strong bones.

Deficiency symptoms:-

Haemorrhage.

+ _____ +
+ _____ +

Q4) What are carbohydrates? Classify and give detail of each with examples?

CARBOHYDRATES:-

Carbohydrates are one of the main micro-nutrients, along with protein and fats. They are type of organic compound made up of carbon, hydrogen and oxygen, and they provide the body with energy.
e.g.:- Sugar (glucose, fructose, sucrose).

Starch (found in grains, potatoes, and beans).

Fiber (found in fruits, vegetables, and whole grains).

CLASSIFICATION OF CARBOHYDRATES:-

1) MONOSACCHARIDE:-

- One sugar unit
- Important single sugar are Glucose, Fructose, Galactose.

Glucose (Dextrose):-

- Give energy for body activity.
- It is primary fuel of cell.
- It usually not found in diet (corn syrup).
- Produce from starch.

Fructose:-

- Fruit, Honey.
- Sweetest of simple sugar.
- Soft drink, Ready to use, cereals, Desserts.

Galactose:-

Milk sugar.

CHARACTERISTICS OF MONOSACCHARIDE:-

- Are simple single sugar.
- which require no Digestion
- Quickly absorbed from Intestine to Blood and carried to the liver.
- In liver converted into Glucogen and stored.

1) DISACCHARIDE:-

- Are simple double sugar.
- which link with two single sugar.
- Important Disaccharides are sucrose, lactose and Maltose.

Sucrose:- Glucose + Fructose

e.g:- Sugar, Brown sugar, Sugarcane, Sugar beet.

Lactose:- Glucose + Galactose

Starch \Rightarrow Maltose \Rightarrow Glucose.

Sugar alcohols such sorbitol. Used in Candies, Beverages.

2) POLYSACCHARIDE:-

Starch:- (Glucose)_n

e.g. Cereals, legumes, Tubers

Glycogen:- (Glucose)_n

Animal Food.

Stored in liver and Muscles.

Fibers-

Plant food - Vegetable, Fruits, Grain.

Date.

Not digested by Human.

e.g.:- Cellulose, Hemicellulose, Pectins, Gums, Lignin.

