

Chapter-3

MULTIPLE CHOICE QUESTIONS-

1. Which of the following nutrients provides the maximum energy per gram?

- A) Carbohydrates
- B) Proteins
- C) Fats
- D) Vitamins

Answer: C) Fats

2. What is the energy value of fats per gram?

- A) 4 calories
- B) 7 calories
- C) 9 calories
- D) 12 calories

Answer: C) 9 calories

3. Which of the following is NOT a function of fats?

- A) Providing satiety
- B) Acting as a solvent for water-soluble vitamins
- C) Aiding in absorption of fat-soluble vitamins
- D) Providing energy

Answer: B) Acting as a solvent for water-soluble vitamins

4. Which type of fat is solid at room temperature and should be minimally used

to avoid heart problems?

- A) Vegetable oils
- B) Saturated fats like ghee and butter
- C) Unsaturated fats
- D) Polyunsaturated fats

Answer: B) Saturated fats like ghee and butter

5. Glucose, fructose and galactose are examples of:

- A) Disaccharides
- B) Polysaccharides
- C) Monosaccharides
- D) Oligosaccharides

Answer: C) Monosaccharides

6. One gram of carbohydrate provides how many calories of energy?

- A) 3 calories
- B) 4 calories
- C) 5 calories
- D) 9 calories

Answer: B) 4 calories

7. The protein-sparing action of carbohydrates refers to:

- A) Carbohydrates building muscle tissue
- B) Carbohydrates being used for energy, saving proteins for body-building

functions

- C) Carbohydrates converting into proteins
- D) Carbohydrates storing proteins in the liver

Answer: B) Carbohydrates being used for energy, saving proteins for body-building functions

8. Which of the following is an essential amino acid?

- A) Alanine
- B) Glycine
- C) Leucine
- D) Serine

Answer: C) Leucine (Essential amino acids include leucine, isoleucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine)

9. Complete proteins (high biological value) are found in:

- A) Cereals
- B) Legumes
- C) Animal sources like milk, egg, meat
- D) Vegetables

Answer: C) Animal sources like milk, egg, meat

10. Approximately what percentage of the human body consists of proteins?

- A) 5-10%
- B) 15-20%
- C) 25-30%

- D) 35-40%

Answer: B) 15-20%

11. Which mineral is most abundant in the human body?

- A) Iron
- B) Iodine
- C) Calcium
- D) Phosphorus

Answer: C) Calcium

12. Deficiency of iron leads to:

- A) Goitre
- B) Anaemia
- C) Rickets
- D) Scurvy

Answer: B) Anaemia

13. Which of the following is the best source of iodine?

- A) Milk
- B) Green leafy vegetables
- C) Iodised salt and seafood
- D) Whole grains

Answer: C) Iodised salt and seafood

14. Prolonged deficiency of iodine results in:

- A) Anaemia
- B) Goitre
- C) Rickets
- D) Scurvy

Answer: B) Goitre

15. Which vitamin deficiency causes rickets in children?

- A) Vitamin A
- B) Vitamin B
- C) Vitamin C
- D) Vitamin D

Answer: D) Vitamin D

16. The deficiency of vitamin C causes which disease?

- A) Beri-Beri
- B) Scurvy
- C) Pellagra
- D) Rickets

Answer: B) Scurvy

17. The 3Ds (dermatitis, diarrhoea and dementia) are symptoms of deficiency of:

- A) Thiamine
- B) Riboflavin
- C) Niacin
- D) Vitamin C

Answer: C) Niacin

18. Which vitamin is given to infants immediately after birth to prevent haemorrhage?

- A) Vitamin A
- B) Vitamin D
- C) Vitamin E
- D) Vitamin K

Answer: D) Vitamin K

19. Beri-Beri is caused by the deficiency of which vitamin?

- A) Riboflavin
- B) Thiamine
- C) Niacin
- D) Folic acid

Answer: B) Thiamine

20. Dietary fibre (roughage) helps in:

- A) Building muscle tissue
- B) Providing energy

- C) Keeping the digestive system clean and easing bowel movements
- D) Storing fat in the body

Answer: C) Keeping the digestive system clean and easing bowel movements

SHORT ANSWER TYPE QUESTIONS-

1. What are the fat- soluble vitamins?

A- Fat-soluble vitamins are **vitamins that require fat to dissolve and be usable in the body. Vitamins A, D, E, and K** are called the fat-soluble vitamins, because they are soluble in organic solvents and are absorbed and transported in a manner similar to that of fats.

2. Name the diseases caused by the deficiency of each of the vitamins.

A- (i) Vitamin A- Night blindness, Xerophthalmia

(ii) Vitamin D-Rickets, Osteomalacia

(iii) Vitamin E- Reproductive failure

(iv) Vitamin K- Haemorrhage

(v) Vitamin B- Beriberi

(vi) Vitamin C-Scurvy

3. Give names of two sources of every fat- soluble vitamin.

A- (i) Vitamin A- Carrots, Dairy products

(ii) Vitamin D- Eggs, Fish

(iii) Vitamin E- Green vegetable, Nuts

(iv) Vitamin K- Spinach, mustard green

4. Which food will you prescribe for the patients suffering from:

(a) Scurvy- Fruits

(b) Beri-beri- Chickpeas, Seafood

(c) Anaemia- Liver, meat products and egg yolk

5. Which nutrients are referred to as body- building foods?

A- Proteins and Minerals are the nutrients that are referred to as body- building foods.

7. State how each of the following nutrients contributes to good health:

(a) Iron- ‘Heme’ present in Iron ia an important part of haemoglobin in the blood. Haemoglobin combines with oxygen in the lungs to form oxyhaemoglobin and is carried to all parts of body tissues by blood circulation.

(b) Calcium- Calcium is the most important factor in building skeleton and teeth and is more important during the growing years.

(c) Vitamin A- Vitamin A is required for normal vision. It is also important in the body’s resistance to infection.

(d) Protein- Proteins are important for body- building functions as every cell in the body is composed of proteins.

8. Give one good source for each of nutrients mentioned above.

A- a) Iron- Liver, meat, egg yolk

b) Calcium- Milk and Milk products

c) Vitamin A- Liver, whole milk, egg

d) Protein- Milk, egg, cheese, cereals

9. Why are animal protein supposed to be better than vegetable protein? Give three examples of each.

A- Animal proteins are the complete proteins. These proteins are found in those foods which have all the essential amino acids in significantly quantities. These proteins have a high biological value, which means these are easily and completely used by the body.

Animal protein- Milk, egg, cheese

Vegetable protein- Cereals, legumes, vegetables

LONG ANSWER TYPE QUESTIONS

1. By the deficiency of which nutrients is Kwashiorkor caused? What are the preventive measures of this disease?

A- Kwashiorkor is caused by the deficiency of Vitamin A. The main cause is not eating enough protein or other essential vitamins and minerals. It is most common in developing countries with a limited food supply, poor hygiene and lack of education about the importance of giving babies and children an adequate diet.

Kwashiorkor can be prevented by including protein rich food such as meat, fish, dairy products, eggs, soy and beans in our diet. Equal amount of calories intake from carbohydrates, sugar, fats, proteins can be helpful in treating Kwashiorkor.

2. (a) Choose four of the following nutrients and state how each contributes to good health:

- (i) Calcium (iii) Iron (v) Carbohydrates.
 (ii) Vitamin (iv) Proteins

(b) For each nutrient, name the two common foods which are good sources of nutrient.

A-

Nutrients	(a)Contribution	(b) Common foods
(i)Calcium	<ul style="list-style-type: none"> • Bone and teeth formation • Constriction and relaxation of blood vessel, Blood clotting 	Dairy Products, Green Vegetables
(ii)Vitamin	<ul style="list-style-type: none"> • Prevention of diseases • Participation in regulations of body processes 	Citrus Fruits, Vegetables
(iii)Iron	<ul style="list-style-type: none"> • Growth and Development • Immune function. Wound healing 	Eggs, Meat

(iv)Proteins	<ul style="list-style-type: none"> • Gives energy • Maintain the fluid balance 	<ul style="list-style-type: none"> • Animal protein like eggs , meat, milk • Vegetable protein like Cereals, legumes, green vegetables
(v)Carbohydrates	<ul style="list-style-type: none"> • Regulation of fat metabolism • Heart Function 	Sugars, Cereal

3. Food is vital for performing various functions. State the functions.

A- (i) Food supplies nutrients for health.

(ii) Food is a source of power.

(iii) Food is a source of security.

(iv) Food is a status symbol.

(v) Food is a symbol of hospitality and friendship throughout the world.

(vi) Food is an outlet for emotion.

(vii) It is a sum of culture and traditions.

4. (a) What do fats, proteins and water provide to the human body?

A- Fats are a concentrated source of energy. They supply energy of 9 calories per gram. They are organic compounds made up of carbon, hydrogen and oxygen.

Proteins are made up of amino acids. Most food proteins are composed of 12 to 22 amino acids. It has contribution of 10% to 15% of energy value of the most well- balanced diet.

Water acts as a solvent for several products during digestion. It plays an important role in the regulation of body temperature.

(b) Give three sources, each of Calcium, Iron, and Vitamin A that are essential for daily diet.

A- Calcium- Dairy Product, Green vegetables, Tofu

Iron- Eggs, Fruits, Nuts

Vitamin A- Carrots, Dairy Products, Green leafy vegetables

5. (a) Classify food according to its functions.

(b) Give two examples of each.

A- ICMR has recently classified the different food items into different food groups according to their functions:

i) Energy Giving Foods: Fats and Carbohydrates

ii) Body Building Foods: Proteins and Minerals

iii) Protective Foods: Vitamins and Minerals

iv) Regulatory Foods: Water and Roughage

(c) What are the uses and sources of Vitamin C?

A- Uses:

- It helps in immune function and wound healing.
- It helps in collagen and connective tissue formation.

Sources:

- Fruits- Kiwi, Citrus Fruits
- Juices- Oranges, Grapefruit. Tomato
- Vegetables- Broccoli, Sprouts, Peppers

6. (a) What do you understand by nutrition?

A- Nutrition is a combination of processes by which living organisms receive and utilize the material necessary for the maintenance of its functions and for the growth and renewal of its components.

(b) Lack of nutrients lead to deficiency disease. Give reasons.

A- Lack of nutrients lead to deficiency disease as nutrients plays a vital role in proper functioning of body. It gives us energy and immunity to fight against the diseases.

7. (a) Why is Ascorbic acid important for body?

A- Ascorbic acid is essential for the healthy development of teeth, bones, cartilage and connective tissues. It plays an important part in healing of wounds and improves the ability to withstand stresses of injury and infection.

(b) What are the sources of Ascorbic acid?

A- Fresh citrus fruits like lemon, orange, grape, amla, pineapple, guavas are excellent sources of Vitamin C. Spinach, green chillies, cabbage and turnip also contains adequate amount of Vitamin C even when cooked.

(c) State the function of Vitamin C.

A- i) It is an antioxidant.

ii) It helps in collagen and connective tissue formation.

iii) It helps in strengthening the immune system.

(d) Name a disease caused by the deficiency of Vitamin C and give its symptoms.

A- Disease caused by a deficiency of Vitamin C is called Scurvy. The main symptoms of Scurvy are restlessness, loss of appetite, general soreness to touch, sore mouth and gums with bleeding and shaking of the teeth, haemorrhages and swelling of legs with problems of knee joints.

8. (a) State the functional classification of food.

A- Food is classified into four major groups according to their functions:

i) Energy Giving Foods: Fats and Carbohydrates

ii) Body Building Foods: Proteins and Minerals

iii) Protective Foods: Vitamins and Minerals

iv) Regulatory Foods: Water and Roughage

(b) Classify Vitamins under their two groups.

A- Vitamins are classified into two groups:-

i) Fat- Soluble Vitamin- Vitamin 'A', 'D', 'E', 'K'

ii) Water- Soluble Vitamin- Vitamin 'B- complex', 'C'

