

ADVANCED LEVEL**More than One Answer Type**

6. Which foods are rich in fiber?

- A) Whole grains
 B) Fruits
 C) Processed snacks
 D) Vegetables

Key: A, B, D

Explanation: Fiber is found in plant foods like whole grains, fruits, and vegetables. It helps with digestion.

7. What are the roles of vitamins and minerals in a balanced diet?

- A) Immune response support
 B) Energy storage
 C) Bone health
 D) Tissue repair

Key: A, C, D

Explanation: Vitamins and minerals help our immune system, keep bones strong, and help repair body tissues. They don't store energy.

Fill In the Blanks

8. The main source of energy for the body comes from _____, which includes whole grains, fruits, and vegetables.

Key: carbohydrates

Explanation: Carbohydrates are the body's main fuel. They are broken down into glucose to give us energy.

9. Healthy fats, important for energy storage and hormone production, can be found in foods like avocados, olive oil, and _____.

Key: nuts / fatty fish (e.g., salmon)

Explanation: Nuts (like almonds) and fatty fish (like salmon) are excellent sources of healthy fats.

Matching Type

10. Match each food source with its corresponding nutrient category.

Column A

1. Oatmeal
 2. Grilled Chicken
 3. Avocado
 4. Spinach

Column B

- A. Healthy fats
 B. Proteins
 C. Carbohydrates
 D. Vitamins and minerals

Key: 1-C, 2-B, 3-A, 4-D

Answer the Following Questions

11. How do healthy fats contribute to overall health, and what are some sources of these fats?

Answer: Healthy fats provide energy, support cell growth, and help absorb vitamins. Sources include avocados, nuts, seeds, olive oil, and fatty fish. They are important for brain health and hormone production. Unsaturated fats are considered healthy.

12. What role does water play in a balanced diet, and how can individuals ensure

Explanation: Fiber adds bulk to food, helps it move through the digestive system, and makes you feel full, aiding digestion and weight control.

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6. Which meals could be part of a balanced diet?

- A) Oatmeal topped with berries B) A bag of chips
C) Grilled chicken salad D) Baked salmon with quinoa

Key: A, C, D

Explanation: Balanced meals contain a mix of nutrients. Oatmeal (carbs+fibre), chicken salad (protein+veg), and salmon with quinoa (protein+carbs) are balanced.

7. What are good sources of hydration?

- A) Drinking water B) Fruits C) Soda D) Vegetables

Key: A, B, D

Explanation: Water is best. Many fruits (like watermelon) and vegetables (like cucumber) also have high water content. Soda is not a healthy choice.

Fill In the Blanks

8. _____ are essential for growth, repair, and maintenance of body tissues and can be found in sources like meat, fish, and beans.

Key: Proteins

Explanation: Proteins are vital nutrients made of amino acids. They are found in animal products (meat, fish) and plants (beans, lentils).

9. Fiber aids in digestion and helps maintain a healthy weight, and is found in whole grains, fruits, and _____.

Key: vegetables

Explanation: Vegetables, along with whole grains and fruits, are excellent sources of dietary fiber.

Matching Type

10. Match each component of a balanced diet with its role or example.

Column A

1. Carbohydrates
2. Proteins
3. Fats
4. Vitamins and Minerals

Column B

- A. Essential for growth and repair of tissues
- B. Main source of energy for the body
- C. Crucial for various bodily functions, including immune response
- D. Important for hormone production and absorption of vitamins

Key: 1-B, 2-A, 3-D, 4-C

Answer the Following Questions

11. What are the main roles of carbohydrates in a balanced diet, and what are some good sources?

Answer: Carbohydrates provide the main energy for the body and brain. Good sources include whole grains (brown rice, oats), fruits, vegetables, and beans. They fuel daily activities. Choosing complex carbs (like whole grains) provides longer-lasting energy and fiber.

12. Why are proteins considered essential in a balanced diet, and what are some examples of protein sources?

Answer: Proteins are essential for building and repairing muscles, organs, skin, and making enzymes/hormones. Sources include meat, poultry, fish, eggs, dairy, beans, lentils, and nuts.

Our body cannot store protein, so we need to eat it regularly. Both animal and plant foods provide protein.

TEACHING TASK (PAGE NO:84)

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. Iron deficiency anemia primarily affects which demographic?
- A) Infants only
 - B) Men over 50
 - C) Women of childbearing age and children
 - D) Elderly men

Key: C

Explanation: Women (due to menstrual blood loss) and growing children have higher iron needs, so they are more likely to become deficient.

2. What is the primary symptom of goiter?
- A) Fatigue
 - B) Hair loss
 - C) Swelling of the thyroid gland
 - D) Joint pain

Key: C

Explanation: Goiter is an enlargement of the thyroid gland in the neck, caused mainly by iodine deficiency.

3. What dietary deficiency is linked to delayed growth and weak bones?
- A) Vitamin C
 - B) Iron
 - C) Calcium and Vitamin D
 - D) Niacin

Key: C

Explanation: Calcium and Vitamin D are crucial for strong bones. Lack of them in childhood can cause rickets (soft, weak bones).

4. Which deficiency disease is characterized by a lack of thiamine?
- A) Scurvy
 - B) Goiter
 - C) Beriberi
 - D) Rickets

Key: C

Explanation: Beriberi is a disease caused by not getting enough Vitamin B1 (thiamine). It affects the nerves and heart.

5. What is a common risk factor for developing iron deficiency anemia?

- A) High fiber diet
B) Heavy exercise
C) Insufficient meat intake
D) High dairy consumption

Key: C

Explanation: Meat (especially red meat) is a rich source of iron. Not eating enough iron-rich foods can lead to anemia.

ADVANCED LEVEL

More than One Answer Type

6. Which of the following are considered deficiency diseases?

- A) Scurvy
B) Diabetes
C) Rickets
D) Iron Deficiency Anemia

Key: A, C, D

Explanation: Deficiency diseases are caused by a lack of specific nutrients: Scurvy (Vitamin C), Rickets (Vitamin D/Calcium), Anemia (Iron).

7. What are common symptoms of scurvy?

- A) Fatigue
B) Swollen and bleeding gums
C) Joint pain
D) Weight loss

Key: A, B, C

Explanation: Scurvy, from lack of Vitamin C, causes tiredness, painful/swollen gums that bleed easily, and joint/muscle pain.

Fill In the Blanks

8. The "four D's" associated with Pellagra include dermatitis, diarrhea, _____, and death.

Key: dementia

Explanation: Pellagra is caused by niacin (Vitamin B3) deficiency. Its severe symptoms are dermatitis (skin rash), diarrhea, dementia (confusion), and can lead to death.

9. Goiter is a result of insufficient _____ in the diet, leading to swelling of the thyroid gland.

Key: iodine

Explanation: Iodine is needed to make thyroid hormones. Without enough iodine, the thyroid gland in the neck swells up, causing a goiter.

Matching Type

10. Match each deficiency disease with its cause or key symptom.

Column A

1. Scurvy
2. Rickets
3. Beriberi
4. Pellagra

Column B

- A. Weak, soft bones and skeletal deformities
B. Lack of vitamin C in the diet
C. Dermatitis, diarrhea, and dementia
D. Lack of thiamine (vitamin B1) in the diet

Key: 1-B, 2-A, 3-D, 4-C

Answer the Following Questions

11. What are the symptoms and causes of scurvy, and who is most at risk?

Answer: Scurvy is caused by severe lack of Vitamin C. Symptoms include fatigue, swollen/bleeding gums, joint pain, and bruising. People at risk are those with very poor diets, like some elderly or sailors in the past.

Vitamin C is needed to make collagen. Without it, tissues break down. Eating fresh fruits and vegetables prevents it.

12. What condition is caused by insufficient iodine intake, and what are its primary symptoms?

Answer: Insufficient iodine causes goiter. The primary symptom is a visible swelling or lump in the front of the neck due to an enlarged thyroid gland.

Iodine is essential for thyroid hormone production. Iodized salt is the main way to prevent iodine deficiency.

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. What is the main cause of deficiency diseases?

- A) Genetic mutations B) Infections
C) Lack of essential nutrients D) Environmental factors

Key: C

Explanation: Deficiency diseases happen when the body does not get enough of a specific vitamin or mineral over a long time.

2. Which vitamin deficiency causes scurvy?

- A) Vitamin A B) Vitamin B12
C) Vitamin C D) Vitamin D

Key: C

Explanation: Scurvy is caused by a severe and prolonged deficiency of Vitamin C (ascorbic acid).

3. What is a common symptom of rickets?

- A) Swollen gums B) Skeletal deformities
C) Fatigue D) Dermatitis

Key: B

Explanation: Rickets softens and weakens bones in children, leading to bowed legs, thick wrists/ankles, and other bone deformities.

4. Beriberi is primarily caused by a deficiency in which vitamin?

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

Key: B

Explanation: Beriberi is caused by a lack of Vitamin B1, also known as thiamine.

5. What are the "four D's" associated with pellagra?

- A) Diarrhea, dementia, dermatitis, and death
- B) Dry skin, dizziness, depression, and drowsiness
- C) Diarrhea, dizziness, dehydration, and death
- D) Difficulty breathing, dementia, dermatitis, and disability

Key: A

Explanation: Pellagra, from niacin (B3) deficiency, is famously remembered by its four main symptoms: Dermatitis, Diarrhea, Dementia, and Death.

ADVANCED LEVEL

More than One Answer Type

6. Which vitamins or minerals are associated with rickets?

- A) Vitamin C
- B) Vitamin D
- C) Calcium
- D) Iron

Key: B, C

Explanation: Rickets is primarily caused by a lack of Vitamin D, which is needed for the body to absorb and use calcium properly for bones.

7. What are the symptoms of beriberi?

- A) Weakness
- B) Dermatitis
- C) Nerve damage
- D) Difficulty walking

Key: A, C, D

Explanation: Beriberi affects the nervous and circulatory systems, causing weakness, pain, nerve damage (tingling), and trouble walking.

Fill In the Blanks

8. Scurvy is a deficiency disease caused by a lack of _____ in the diet, leading to symptoms like swollen gums and joint pain.

Key: vitamin C

Explanation: Vitamin C is vital for healthy skin, blood vessels, and gums. A long-term shortage causes scurvy.

9. Rickets is associated with insufficient intake of _____ and calcium, often due to lack of sunlight exposure.

Key: vitamin D

Explanation: Our skin makes Vitamin D when exposed to sunlight. This vitamin helps bones absorb calcium. Without it, bones become soft (rickets).

Matching Type

10. Match each symptom with the corresponding deficiency disease.

Column A

- 1. Fatigue and joint pain
- 2. Weakness and nerve damage
- 3. Swelling of the thyroid gland
- 4. Pale skin and shortness of breath

Column B

- A. Iron deficiency anemia
- B. Scurvy
- C. Goiter
- D. Beriberi

Key: 1-B, 2-D, 3-C, 4-A

5. What is the main function of algae in aquatic ecosystems?

- A) Decomposition
- B) Oxygen production through photosynthesis
- C) Pathogen control
- D) Nutrient absorption

Key: B

Explanation: Algae, like plants, use sunlight to make their own food (photosynthesis). This process releases oxygen into the water and air.

ADVANCED LEVEL

More than One Answer Type

6. Which of the following are benefits of cooking food?

- A) Kills harmful bacteria
- B) Makes food taste worse
- C) Enhances digestibility
- D) Increases nutritional value

Key: A, C

Explanation: Cooking kills dangerous germs and breaks down tough fibers, making food easier to digest and absorb nutrients from.

7. What are common causes of food spoilage?

- A) Microbial growth
- B) Enzymatic activity
- C) Cooking food
- D) Oxidation

Key: A, B, D

Explanation: Food spoils due to bacteria/fungi growing on it, natural enzymes in the food breaking it down, and exposure to air (oxidation).

Fill In the Blanks

8. Yeast (*Saccharomyces cerevisiae*) is used in baking and brewing, where it ferments sugars, producing _____ and alcohol.

Key: carbon dioxide (CO₂)

Explanation: In baking, yeast eats sugar and produces CO₂ gas, which makes dough rise. In brewing, it produces alcohol and CO₂.

9. Algae, such as *Chlorella* and *Spirulina*, are rich in protein and are often used as dietary _____ due to their health benefits.

Key: supplements

Explanation: These types of algae are dried and sold as powder or tablets. They are taken to add extra vitamins, minerals, and protein to the diet.

Matching Type

10. Match each type of microbe with its role or example.

Column A

- 1. Yeast
- 2. Nitrogen-fixing bacteria
- 3. *Chlorella*

Column B

- A. Produces antibiotics like streptomycin
- B. Important for photosynthesis and dietary supplements
- C. Ferments sugars in baking and brewing

4. Actinomycetes

D. Converts atmospheric nitrogen into a usable form for plants

Key: 1–C, 2–D, 3–B, 4–A**Answer the Following Questions**

11. How does refrigeration help in food preservation?

Answer: Refrigeration slows down the growth of spoilage-causing bacteria and mold. It also slows down chemical reactions and enzyme activity in food. Cold temperatures put microbes "to sleep," so they multiply very slowly. This keeps food fresh and safe to eat for longer.

12. What are some beneficial roles of microbes in food production?

Answer: Microbes are used to make foods like yogurt (bacteria), cheese, bread (yeast), vinegar, and soy sauce (fermentation). They improve flavor, texture, and preservation. Helpful bacteria and yeast are essential in creating many everyday foods through controlled fermentation processes.

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. What is the primary purpose of cooking food?

- | | |
|---------------------------|----------------------------|
| A) To enhance color | B) To make it safe to eat |
| C) To reduce cooking time | D) To improve texture only |

Key: B

Explanation: Cooking kills harmful bacteria, viruses, and parasites that can cause food poisoning, making food safer to eat.

2. Which of the following is a common cause of food spoilage?

- | | |
|---------------------|------------|
| A) Freezing | B) Canning |
| C) Microbial growth | D) Salting |

Key: C

Explanation: The main cause of food going bad is the growth of microorganisms like bacteria, yeast, and mold on the food.

3. What method of preservation involves removing moisture from food?

- | | |
|------------------|-----------------|
| A) Refrigeration | B) Canning |
| C) Drying | D) Fermentation |

Key: C

Explanation: Drying (or dehydration) removes water from food. Microbes need water to grow, so dry food lasts much longer.

4. Which beneficial microbe is used in the production of yogurt?

- | | |
|---------------------|-----------------------------|
| A) Escherichia coli | B) Streptomyces |
| C) Lactobacillus | D) Saccharomyces cerevisiae |

Key: C

Explanation: Yogurt is made by adding specific live bacteria, like *Lactobacillus bulgaricus* and *Streptococcus thermophilus*, to milk.

5. What is the process of preserving food in an acidic solution called?
 A) Fermentation
 B) Pickling
 C) Drying
 D) Curing

Key: B

Explanation: Pickling involves soaking food (like cucumbers) in a solution of vinegar (acid), salt, and spices. The acidic environment prevents microbial growth.

ADVANCED LEVEL

More than One Answer Type

6. Which methods are commonly used for food preservation?
 A) Refrigeration
 B) Cooking
 C) Canning
 D) Fermentation

Key: A, C, D

Explanation: Common preservation methods keep food safe longer by controlling temperature (refrigeration), sealing out air (canning), or using microbes (fermentation).

7. What are some examples of useful microbes?
 A) *Lactobacillus*
 B) *Streptococcus* (causes strep throat)
 C) Yeast (*Saccharomyces cerevisiae*)
 D) Nitrogen-fixing bacteria

Key: A, C, D

Explanation: Helpful microbes include *Lactobacillus* (for yogurt), yeast (for bread/beer), and nitrogen-fixing bacteria (for soil fertility). Some *Streptococcus* are harmful.

Fill In the Blanks

8. Food spoilage is caused by factors such as microbial growth, enzymatic activity, _____, and physical damage.

Key: oxidation

Explanation: Oxidation is when food reacts with oxygen in the air, causing fats to go rancid or fruits to turn brown.

9. Common methods of food preservation include refrigeration, canning, drying, salting, fermentation, and _____.

Key: freezing / pickling

Explanation: Freezing is a very common method. Pickling (using acid) is another effective way to preserve vegetables and some fruits.

Matching Type

10. Match each food preservation method with its description or example.

Column A

1. Canning
2. Drying

Column B

- A. Using salt to draw out moisture
- B. Heating food in sealed containers

3. Fermentation

C. Removing moisture to inhibit microbial growth

4. Refrigeration and Freezing

D. Lowering temperatures to slow microbial growth

Key: 1-B, 2-C, 3-A, 4-D

Answer the Following Questions

11. What is the primary purpose of cooking food?

Answer: The primary purpose is to make food safe by killing harmful germs and parasites. It also makes food easier to digest and more enjoyable to eat.

Cooking uses heat to destroy pathogens. It also breaks down tough fibers, improves flavor, and unlocks nutrients.

12. What are the common causes of food spoilage?

Answer: The main causes are growth of bacteria, yeast, and mold; activity of natural enzymes in the food; exposure to air (oxidation); and physical damage like bruising.

These processes change the food's taste, smell, texture, and appearance, making it unsafe or unpleasant to eat.

