1. COMPONENTS OF FOOD

TEACHING TASK

Multiple Choice Questions

1 Which solution is NOT mentioned as necessary for testing food nutrients?
Answer: C) Vinegar
Explanation: Iodine is used for starch testing, copper sulfate and caustic soda are used for protein testing. Vinegar is not typically used in standard food nutrient tests.

2.Which solutions are used in the protein test?
Answer: B) Copper sulfate solution and caustic soda solution
Explanation: The protein test (Biuret test) requires copper sulfate and caustic soda (sodium hydroxide) to detect proteins, resulting in a violet color if proteins are present.

3.What do you need to do before testing a solid food item for protein?
Answer: C) Make it into a paste or powder
Explanation: Solid food items must be ground into a paste or powder to ensure proper mixing with the test solutions for accurate results.

4.How can you tell if a food item contains fat?
Answer: C) It leaves an oily patch on paper
Explanation: The fat test involves rubbing food on paper; a translucent oily patch indicates the presence of fat.

5.What should you do with the paper after rubbing the food item on it to test for fat?
Answer: B) Let it dry
Explanation: Letting the paper dry helps determine if the patch is due to fat (remains translucent) or water (disappears).

6.If a food item contains water, what happens to the oily patch after drying?
Answer: B) It disappears
Explanation: If the patch is due to water, it evaporates upon drying, leaving no mark, whereas a fat patch remains.

7.How do you observe the color change in the starch test?
Answer: C) By looking for a blue-black color
Explanation: Iodine solution turns blue-black in the presence of starch, indicating a positive result.

8.What indicates a positive result for the fat test after the paper has dried?
Answer: D) An oily patch remains visible
Explanation: A persistent translucent patch after drying confirms the presence of fat.

9.How can you test multiple food items for starch?
Answer: C) Add iodine solution to each item
Explanation: Each food item should be tested separately with iodine solution to avoid cross-contamination and ensure accurate results.

10.Which vitamin helps our body use calcium for bones and teeth?
Answer: C) Vitamin D
Explanation: Vitamin D facilitates calcium absorption, essential for bone and teeth health.

11.What is the role of dietary fibers in our body?
Answer: B) Aid in digestion by getting rid of undigested food
Explanation: Dietary fiber promotes digestion and helps eliminate undigested food, preventing constipation.

12.How does water benefit our body according to the paragraph?
Answer: B) It helps absorb nutrients and remove waste as urine and sweat
Explanation: Water aids in nutrient absorption and waste elimination through urine and sweat.

13.What happens if vegetables and fruits are washed after cutting or peeling?
Answer: B) Some vitamins may be lost
Explanation: Washing after cutting or peeling can wash away water-soluble vitamins like Vitamin C.

14.Why is cooking food beneficial?
Answer: B) It makes food easier to digest and improves taste
Explanation: Cooking breaks down complex nutrients, making them easier to digest and often enhances flavor.

15.What nutrient is easily destroyed by heat during cooking?
Answer: B) Vitamin C
Explanation: Vitamin C is heat-sensitive and can be destroyed during cooking.

16.What is the potential consequence of eating too much fatty food?
Answer: B) Obesity
Explanation: Excessive fat intake can lead to weight gain and obesity due to high caloric content.

17.Why should we include some raw fruits and vegetables in our diet?
Answer: B) They contain nutrients that can be lost during cooking
Explanation: Raw fruits and vegetables retain heat-sensitive nutrients like Vitamin C.

18.What can happen if a person's diet is low in both carbohydrates and proteins for a long time?
Answer: B) Their growth may stop completely, and they may become very thin and weak
Explanation: Carbohydrates provide energy, and proteins are essential for growth and repair. Deficiencies in both can lead to stunted growth and weakness.

19.How can deficiency diseases be prevented?
Answer: B) By consuming a balanced diet
Explanation: A balanced diet provides all necessary nutrients, preventing deficiency diseases.

More than One Answer Type

20.Which observations indicate the presence of fat in a food item?
Answer: C) There is an oily patch on the paper, D) Light can be seen faintly through the oily patch on the paper
Explanation: A translucent oily patch that allows light to pass through after drying confirms fat presence. Options A and B are incorrect as they relate to protein and starch tests, respectively.

21.Which of the following nutrients are considered 'energy-giving foods'?
Answer: A) Carbohydrates, C) Fats
Explanation: Carbohydrates and fats are primary energy sources, while proteins are mainly for growth and repair, and vitamins support various functions but are not primarily energy-giving.

22.What are the functions of dietary fibers (roughage) in our body?
Answer: B) Aid in digestion, C) Help our body get rid of undigested food
Explanation: Dietary fiber promotes digestion and helps eliminate undigested food, not energy provision or muscle building.

Reason and Assertion Type

23.Assertion (A): Repeatedly washing rice and pulses can remove some vitamins and minerals.
Reason (R): The skins of many vegetables and fruits have vitamins and minerals.
Answer: B) Both A and R are true but R is not the correct explanation of A.
Explanation: Repeated washing of rice and pulses removes water-soluble vitamins and minerals present in the grains, not their skins. The reason mentions skins of vegetables and fruits, which is true but unrelated to rice and pulses washing.

24.Assertion (A): Cooking improves the taste of food and makes it easier to digest.
Reason (R): Many proteins and minerals are lost if too much water is used during cooking and then thrown away.
Answer: B) Both A and R are true but R is not the correct explanation of A.
Explanation: Cooking enhances taste and digestibility by breaking down nutrients. The reason about nutrient loss due to excess water is true but does not explain why cooking improves taste and digestibility.

25.Matrix Matching Type
Match the vitamins to their deficiency diseases:
Answer:
Vitamin A – R. Loss of vision
Vitamin B1 – P. BeriBeri
Vitamin C – S. Scurvy
Vitamin D – Q. Rickets
Explanation:
Vitamin A deficiency causes vision issues (e.g., night blindness).
Vitamin B1 (thiamine) deficiency leads to BeriBeri.
Vitamin C deficiency causes Scurvy.
Vitamin D deficiency results in Rickets.

Comprehension Type

26.Which vitamin is primarily responsible for helping our body fight against many diseases?
Answer: B) Vitamin C
Explanation: The passage states that Vitamin C helps the body fight against many diseases.

27.Which vitamin is categorized as part of the Vitamin B-complex group?
Answer: None of the options (A, C, D) are correct; however, based on standard knowledge, Vitamin B1 is part of the B-complex group, but it's not listed.
Explanation: The question seems to expect a B-complex vitamin, but none of the options (A, C, D) belong to the B-complex group. This may be a question error, as B-complex includes vitamins like B1, B2, etc., not listed here.

Integer Type

28.How many drops of copper sulfate solution should be added to the test tube for testing protein?
Answer: 2
Explanation: In the Biuret test for proteins, typically 2-3 drops of copper sulfate solution are added to the food sample mixed with caustic soda to detect proteins.

LEARNERS TASK

Multiple Choice Questions

1.What should students avoid doing during the nutrient tests?
Answer: C) Eating or tasting any chemicals
Explanation: Eating or tasting chemicals like iodine or caustic soda is dangerous and should be avoided during experiments.

2.What solution is used to test for starch in food items?
Answer: C) Dilute iodine solution
Explanation: Dilute iodine solution is used to test for starch, turning blue-black in its presence.

3.What color change indicates the presence of starch in a food item?
Answer: B) Blue-black
Explanation: A blue-black color indicates starch when iodine solution is added.

4.What indicates the presence of protein in a food item?
Answer: B) A violet color
Explanation: The Biuret test results in a violet color when proteins are present.

5.What is the purpose of adding water in the protein test?
Answer: B) To dissolve the food paste or powder
Explanation: Water is added to dissolve the food sample into a paste or solution for effective mixing with test reagents.

6.What should you do after adding all solutions in the protein test?
Answer: C) Shake the test tube and let it sit
Explanation: Shaking ensures mixing, and letting it sit allows the color change (violet for proteins) to develop.

7.What is the primary function of carbohydrates in our body?
Answer: A) Provide energy
Explanation: Carbohydrates are the body's primary energy source.

8.Which nutrient is considered an 'energy-giving food' along with carbohydrates?
Answer: B) Fats
Explanation: Fats, along with carbohydrates, are primary energy-giving nutrients.

9.Foods rich in proteins are known as:
Answer: C) Body-building foods
Explanation: Proteins are essential for growth and repair, hence called body-building foods.

10.What is a balanced diet?
Answer: B) A diet that includes all nutrients in the right amounts
Explanation: A balanced diet provides all essential nutrients in appropriate proportions.

11.Why is roughage important in our diet?
Answer: B) It helps in digestion
Explanation: Roughage (dietary fiber) aids digestion by promoting bowel movement.

12.Do people of all ages need the same type of diet?
Answer: B) No, dietary needs can vary by age
Explanation: Nutritional needs vary by age due to differences in growth, activity, and metabolism.

13.How does the amount of physical work we do affect our diet?
Answer: B) It determines the amount and type of nutrients we need
Explanation: Physical activity levels influence energy and nutrient requirements.

14.Which of the following foods are mentioned as nutrient-rich?
Answer: A) Pulses, groundnut, soybean
Explanation: These foods are rich in proteins and other nutrients, unlike processed foods like candy or soda.

15.What is a balanced diet?
Answer: B) A diet that includes all nutrients in the right amounts
Explanation: Repeated question; same answer as Q10.

16.How does the amount of physical work we do affect our diet?
Answer: B) It determines the amount and type of nutrients we need
Explanation: Repeated question; same answer as Q13.

17.What are deficiency diseases?
Answer: B) Diseases caused by a lack of one or more nutrients
Explanation: Deficiency diseases result from insufficient intake of essential nutrients.

18.Which of the following symptoms might occur due to a long-term lack of proteins in a person's diet?
Answer: B) Stunted growth and a swollen face
Explanation: Protein deficiency can cause stunted growth and edema (swelling), as seen in conditions like kwashiorkor.

More than One Answer Type

19.Which of the following are correct procedures for testing for fats?
Answer: A) Wrap a small amount of the food item in a piece of paper, C) Crush the food item carefully so the paper doesn't tear, D) Let the paper dry if the food item contains water
Explanation: These steps are part of the fat test. Option B (iodine solution) is incorrect as it's used for starch testing.

20.Which vitamins are mentioned as important for keeping our eyes healthy?
Answer: A) Vitamin A
Explanation: Vitamin A is explicitly mentioned for eye health. Other vitamins listed (B-complex, C, D) are not associated with eye health in the provided context.

21.Water helps our body in which of the following ways?
Answer: A) Absorb nutrients from food, C) Remove some wastes as urine and sweat
Explanation: Water aids nutrient absorption and waste elimination, but it does not provide vitamins or build bones.

Reason and Assertion Type

22.Assertion (A): A balanced diet includes all nutrients our body needs in the right amounts.
Reason (R): A diet with too much of one nutrient and too little of another cannot support growth and good health.
Answer: A) Both A and R are true and R is the correct explanation of A.
Explanation: A balanced diet ensures all nutrients are in proper amounts, and imbalance can hinder health, as the reason explains.

23.Assertion (A): Including raw fruits and vegetables in our diet is important.
Reason (R): Vitamin C is easily destroyed by heat during cooking.
Answer: A) Both A and R are true and R is the correct explanation of A.
Explanation: Raw fruits and vegetables retain Vitamin C, which is heat-sensitive, explaining why they are important.

24.Matrix Matching Type
Match the nutrients to their functions:
Answer:
Carbohydrates – C. Provide energy
Fats – E. Provide much more energy compared to the same amount of carbohydrates
Proteins – B. Needed for growth and repair
Vitamins – A. Help protect against diseases and maintain various bodily functions
Minerals – D. Essential for proper growth and good health
Explanation:
Carbohydrates provide energy.
Fats provide more energy per gram than carbohydrates.

Proteins are for growth and repair.
Vitamins protect against diseases and support bodily functions.
Minerals are essential for growth and health.

Comprehension Type

25.What is suggested as a preventive measure for deficiency diseases according to the paragraph?
Answer: B) Consuming a balanced diet
Explanation: The passage explicitly states that a balanced diet prevents deficiency diseases.

26.What is implied about the relationship between deficiency diseases and a balanced diet?
Answer: C) A balanced diet can prevent deficiency diseases
Explanation: The passage implies that a balanced diet prevents deficiency diseases by providing all necessary nutrients.

Integer Type

27.How many drops of dilute iodine solution should be added to the food item for testing starch?
Answer: 2
Explanation: Typically, 2-3 drops of dilute iodine solution are added to detect starch, as this is sufficient to observe the blue-black color change.