Chapter 3: Mindful Eating: A Path to a Healthy Body

Exercises — Let Us Enhance Our Learning

Q1 Pick the odd one out and give reasons:
(i) Jowar, Bajra, Ragi, Chana
(ii) Kidney beans, Green gram, Soya bean, Rice

SOLUTION

(i) Chana is the odd one out.
Jowar, Bajra, and Ragi are all millets (nutri-cereals — native grains of India). Chana is a pulse (legume), not a millet.

(ii) Rice is the odd one out.
Kidney beans, Green gram, and Soya bean are all pulses — legumes that are rich sources of protein. Rice is a cereal (a source of carbohydrates), not a pulse.

Answer: (i) Chana — it is a pulse, not a millet. (ii) Rice — it is a cereal, not a pulse.

Q2 Discuss traditional versus modern culinary practices in India.

SOLUTION

Culinary practices are methods of cooking food. They have changed significantly over time.

Traditional practices:
- Cooking was done on a chulha (traditional stove using wood or cow-dung fuel).
- Grinding of grains and spices was done manually using a sil-batta (stone grinder).
- Food was mostly locally grown and seasonal.

Modern practices:
- Cooking is done on modern gas stoves or electric stoves.
- Grinding is done using electrical grinders, saving time and effort.
- Packaged and processed foods are widely used.

These changes are mainly due to technological development, improved transportation, and better communication.

Answer: Traditional: chulha for cooking, sil-batta for grinding, local seasonal food. Modern: gas/electric stoves, electric grinders, packaged food — driven by technology, transport, and communication.

Q3 A teacher says that good food may act as medicine. Ravi is curious about this statement and has some questions for his teacher. List at least two questions that he can ask.

SOLUTION

Ravi can ask questions such as:

1. Which specific foods can help prevent or cure diseases like scurvy, goitre, or night blindness?
(The chapter explains that Vitamin C from citrus fruits cures scurvy, and iodised salt prevents goitre.)

2. How much of a particular food must be eaten to prevent a deficiency disease?
(The chapter notes that vitamins and minerals are needed only in small amounts, yet their deficiency causes diseases.)

3. Can a balanced diet reduce the need for medicines altogether?

Answer: Sample questions: (1) Which foods can prevent or cure deficiency diseases? (2) How much of a food is needed to prevent a deficiency? (3) Can a balanced diet reduce the need for medicines?

Q4 Not all delicious foods are necessarily healthy, while not all nutritious foods are always enjoyable. Share your thoughts along with a few examples.

SOLUTION

This is true. Taste and nutrition are not always linked.

Delicious but not healthy:
- Potato wafers are tasty but high in fat (35 g per 100 g) and calories (536 kcal per 100 g), with little protein and dietary fibre — these are junk foods.
- Carbonated drinks and candy bars taste good but contain high sugar and very low amounts of vitamins, minerals, and dietary fibres.
- Frequent consumption of junk food can cause obesity and several health problems.

Nutritious but not always enjoyable:
- Bitter gourd (karela) and leafy vegetables like spinach are rich in vitamins and minerals but are not always liked by children.
- Millets like ragi and bajra are highly nutritious (good sources of vitamins, minerals like iron and calcium, and dietary fibre) but are less popular than rice or

wheat.

Answer: Junk foods like potato wafers taste good but are unhealthy (high fat, low nutrients). Nutritious foods like millets and leafy vegetables may not always be tasty but are essential for health.

Q5 Medu does not eat vegetables but enjoys biscuits, noodles and white bread. He often has stomach ache and constipation. What changes should he make in his diet to get rid of these problems? Explain your answer.

SOLUTION

Medu's problem is a lack of dietary fibre (roughage) in his diet.

Biscuits, noodles, and white bread are highly processed foods with very little dietary fibre. Without enough roughage, the body cannot get rid of undigested food efficiently, leading to constipation and stomach ache.

Changes Medu should make:
- Include green leafy vegetables (such as spinach) — good sources of roughage.
- Eat fresh fruits — provide dietary fibre and vitamins.
- Include pulses and whole grains (like whole wheat roti) — rich in fibre.
- Drink sufficient water regularly — helps the body process food and pass stools smoothly.

These foods will provide the roughage his body needs for smooth digestion.

Answer: Medu lacks dietary fibre. He should add green leafy vegetables, fresh fruits, pulses, and whole grains to his diet, and drink sufficient water, to improve digestion and prevent constipation.

Q6 Reshma had trouble seeing things in dim light. The doctor tested her eyesight and prescribed a particular vitamin supplement. He also advised her to include a few food items in her diet.
(i) Which deficiency disease is she suffering from?
(ii) Which food component may be lacking in her diet?
(iii) Suggest some food items that she should include in her diet to overcome this problem (any four).

SOLUTION

(i) Reshma is suffering from Night Blindness.

Trouble seeing in dim light (poor vision in darkness) is a symptom of night blindness, caused by Vitamin A deficiency.

(ii) Vitamin A is lacking in her diet.
Vitamin A keeps the eyes and skin healthy. Its deficiency causes poor vision in darkness and sometimes complete loss of vision.

(iii) Food items Reshma should include (any four):
- Papaya
- Carrot
- Mango
- Milk

Answer: (i) Night blindness. (ii) Vitamin A. (iii) Any four: papaya, carrot, mango, milk.

Q7 You are provided the following:
(i) Canned fruit juice
(ii) Fresh fruit juice
(iii) Fresh fruit
Which one would you prefer and why?

SOLUTION

Fresh fruit is the best choice.

Reasons:
- Fresh fruit contains the most nutrients — vitamins, minerals, and dietary fibre — in their natural form.
- Dietary fibre (roughage) present in whole fruit is lost when it is juiced. The chapter states that roughage helps the body get rid of undigested food and ensures smooth passage of stools.
- Some nutrients like Vitamin C are lost during cooking or processing due to heat. Canned juice undergoes processing that destroys some vitamins.
- Fresh fruit juice retains more nutrients than canned juice but loses the fibre that whole fruit provides.

Therefore, fresh fruit is the most nutritious option among the three.

Answer: Fresh fruit is preferred — it retains all vitamins, minerals, and dietary fibre. Canned juice loses nutrients during processing; even fresh juice loses fibre.

Q8 Gourav got a fracture in his leg. His doctor aligned the bones and put on a plaster. The doctor also gave him calcium tablets. On the second visit, the doctor gave him Vitamin D syrup along with calcium tablets. Refer to Fig. 3.5 and answer the following questions:
(i) Why did the doctor give calcium tablets to Gourav?
(ii) On the second visit, why did the doctor give Vitamin D syrup along with calcium tablets?
(iii) What question arises in your mind about the choices made by the doctor in giving the medicines?

SOLUTION

(i) The doctor gave calcium tablets to Gourav because calcium keeps bones and teeth healthy. Gourav had a bone fracture, so his body needed extra calcium to help the broken bones heal and become strong again.

(ii) Vitamin D helps the body absorb calcium for bone and teeth health. Without Vitamin D, the calcium tablets alone would not be fully absorbed by the body. So the doctor added Vitamin D syrup to ensure Gourav's body could actually use the calcium he was taking.

(iii) Sample question: If Vitamin D is needed for calcium absorption, why was Vitamin D not prescribed from the very first visit along with calcium tablets?

Answer: (i) Calcium is needed for bone health and healing the fracture. (ii) Vitamin D helps the body absorb calcium — without it, calcium tablets are less effective. (iii) Sample: Why was Vitamin D not given from the first visit itself?

Q9 Sugar is an example of carbohydrates. Sugar is tested with iodine solution but it does not change to blue-black colour. What can be a possible reason?

SOLUTION

The iodine test specifically detects starch, not all carbohydrates.

A blue-black colour with iodine indicates the presence of starch. Sugar (such as table sugar/sucrose) is a carbohydrate, but it is not a starch.

Starch and sugar are both carbohydrates but have different chemical structures. The blue-black colour of iodine is produced only when iodine interacts with the starch molecule. Since sugar does not have the same structure as starch, iodine does not turn blue-black when added to sugar.

This confirms that all starches are carbohydrates, but not all carbohydrates are starches — sugar is a carbohydrate that is not a starch.

Answer: The iodine test detects starch, not all carbohydrates. Sugar is a carbohydrate but not a starch, so it does not give the blue-black colour reaction with iodine.

Q10 What do you think of Raman's statement, 'All starches are carbohydrates but not all carbohydrates are starches.' Describe the design of an activity to test your answer.

SOLUTION

Raman's statement is correct.

Starch is one type of carbohydrate. Sugar is another type of carbohydrate. So all starches are carbohydrates, but not all carbohydrates (e.g., sugar) are starches.

Activity to test this:
Materials needed: iodine solution, dropper, small dishes, samples — a starchy food (boiled rice or potato), a sugary food (sugar), and a plain carbohydrate-containing food (honey).

Steps:
1. Place a small amount of each food item in a separate dish.
2. Add 2-3 drops of iodine solution to each sample.
3. Observe the colour change.

Expected result:
- Boiled rice or potato (starch) → turns blue-black (starch present = it is a carbohydrate).
- Sugar → does NOT turn blue-black (it is a carbohydrate but not a starch).

This activity confirms that the iodine test detects starch specifically, not all carbohydrates.

Answer: Raman is correct — starch is a type of carbohydrate but not all carbohydrates are starches. Activity: test boiled rice (starch → blue-black with iodine) and sugar (no colour change) to confirm.

Q11 While using iodine in the laboratory, a few drops of iodine fell on Mishti's socks and a few fell on her teacher's saree. The drops of iodine on the saree turned blue-black while the colour on the socks did not change. What can be a possible reason?

SOLUTION

The blue-black colour indicates the presence of starch.

The teacher's saree likely turned blue-black because the fabric of the saree is made from a starch-containing material (such as cotton or natural silk that has been starched/stiffened). Starch is commonly used to stiffen or iron clothes, especially sarees. So when iodine came in contact with the starch on the saree, it turned blue-black.

Mishti's socks did not change colour, which means the material of the socks does not contain starch. Socks are often made from synthetic fibres (like nylon or polyester) or wool, which do not contain starch. So iodine did not produce a blue-black colour on them.

Answer: The saree fabric (likely cotton or starched fabric) contains starch, so iodine turned it blue-black. Mishti's socks are made of synthetic or non-starch material, so no colour change occurred.

Q12 Why are millets considered a healthy choice of food? Can eating just millets suffice for the nutritional requirements of the body? Discuss.

SOLUTION

Why millets are considered healthy:
- Millets (jowar, bajra, ragi, sanwa) are native crops of India that can be easily cultivated in different climatic conditions.
- They are good sources of vitamins, minerals like iron and calcium, and dietary fibres.
- Because of their high nutrient content, they are called nutri-cereals.
- They contribute significantly to a balanced diet required for the normal functioning of the body.

Can millets alone meet all nutritional requirements?
No. Millets are nutritious cereals, but they cannot provide all the nutrients the body needs on their own.
- A balanced diet must include carbohydrates, fats, proteins, vitamins, minerals,

roughage, and water in the right amounts.
- Millets are mainly a source of carbohydrates along with some vitamins, minerals, and fibre — but they do not provide adequate proteins (needed for body building and repair) or fats.
- Foods like pulses, milk, eggs, fruits, and vegetables are also needed for a complete balanced diet.

Answer: Millets are healthy because they are rich in vitamins, minerals (iron, calcium), and dietary fibre — hence called nutri-cereals. But millets alone cannot meet all nutritional needs; a balanced diet also requires proteins, fats, and other food components.

Q13 You are given a sample of a solution. How would you check the possibility of it being an iodine solution?

SOLUTION

You can check if a solution is an iodine solution by testing it on a starchy food item.

Method:
1. Take a small piece of starchy food, such as a slice of potato or a few grains of boiled rice.
2. Place it in a dish.
3. Add 2-3 drops of the given solution on the food item.
4. Observe the colour.

Interpretation:
- If the food item turns blue-black, the solution is likely an iodine solution. This is because iodine turns blue-black in the presence of starch.
- If there is no colour change, the solution is not an iodine solution (or the iodine has been used up).

Note: Iodine solution itself has a characteristic brownish-yellow colour, which can also serve as a visual clue.

Answer: Add a few drops of the solution to a starchy food (like potato or boiled rice). If it turns blue-black, the solution is iodine. No colour change means it is not iodine.