Important Questions for Class 7 Science Chapter 1: Class 7 Science Chapter 1 focuses on the basics of nutrition in plants and animals. Important questions include understanding the difference between autotrophic (self-nourishing) and heterotrophic (other-feeding) nutrition, the process of photosynthesis in plants, and how different animals obtain their food. These concepts form the foundation for future biological studies.

By practicing the important questions for Class 7 Science Chapter 1 students can deepen their understanding of key concepts such as photosynthesis, digestion, and nutrition in plants and animals. These practice questions help reinforce learning and ensure that students are well-prepared for their exams. Regular practice allows students to become familiar with the types of questions that may appear on tests, helping them develop the skills to answer confidently and correctly. It also helps in mastering the scientific terminology and processes discussed in the chapter, which are essential for further studies in biology.

Important Questions for Class 7 Science Chapter 1 Overview

The Important Questions for Class 7 Science Chapter 1 provides an overview of crucial topics covered in the chapter on Nutrition in Plants. It highlights key concepts such as photosynthesis, the process by which plants make their food, and the different modes of nutrition in animals.

These questions help students strengthen their understanding of the scientific concepts discussed in the chapter, laying a strong foundation for future learning in biology. Practicing these questions allows students to better prepare for their exams and deepen their grasp of the subject matter.

Important Questions for Class 7 Science Chapter 1 PDF

You can access the Important Questions for Class 7 Science Chapter 1 PDF by clicking on the link provided below. This resource contains a collection of important questions to help students prepare for their exams. Practicing these questions can help reinforce key concepts and ensure better preparation for exams. The PDF link is available below for easy download.

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Important Questions for CBSE Class 7 Science Chapter 1 Nutrition in Plants

Here are the important questions beneficial for Important Questions for CBSE Class 7 Science Chapter 1 Nutrition in Plants-

Very Short Questions

1: **Name some components of food.**
Answer: Carbohydrates, proteins, fats, vitamins, and minerals.

2: **Define nutrients.**
Answer: Nutrients are essential components of food that include carbohydrates, proteins, fats, vitamins, and minerals.

3: **Give an example of autotrophs.**
Answer: All green plants are examples of autotrophs, which are organisms that can produce their own food using sunlight.

4: **Give an example of heterotrophs.**
Answer: Animals and human beings are examples of heterotrophs, which rely on consuming other organisms for nutrition.

5: **Plants prepare their food by using raw materials present in _____.**
Answer: Surrounding.

6: **What do you mean by nutrition?**
Answer: Nutrition is the mode of taking food by an organism and its utilization by the body.

7: **Name the food factories of plants.**
Answer: Leaves are the food factories of plants.

8: **Name the tiny pores present on the surface of leaves.**
Answer: Stomata.

9: **Name the green pigment present in leaves.**
Answer: Chlorophyll.

10: **_____ helps leaves to capture the energy of sunlight.**
Answer: Chlorophyll.

11: **Why photosynthesis is named so?**
Answer: It is named so because food is synthesized in the presence of sunlight.

12: **Sun is the ultimate source of energy for all living organisms.** True / False
Answer: True.

13: **Where does the nucleus of the cell lie?**
Answer: In the centre of the cell.

14: **State the equation for the process of photosynthesis.**
Answer: Carbon dioxide + water → carbohydrate + Oxygen.

15: **The nucleus in a cell is surrounded by a jelly-like substance called _____.**
Answer: Cytoplasm.

Short Questions

1. **What is Nutrients?**
Answer: Nutrients are essential components of food that our body needs for energy, growth, and repair. These include carbohydrates, proteins, fats, vitamins, and minerals.

2. **How humans and animals are directly or indirectly dependent on plants.**
Answer: All living organisms, including humans and animals, depend on plants either directly by consuming them or indirectly by consuming animals that feed on plants. Plants are the primary source of food and oxygen for all life on Earth.

3. **What is food?**
Answer: Food is any substance consumed to provide nutritional support for an organism. It contains nutrients like carbohydrates, proteins, fats, vitamins, and minerals, which are necessary for energy, growth, and maintenance of body functions.

4. **Why do we need food?**
Answer: We need food to provide energy, to build and repair body tissues, and to support vital life processes like respiration and growth. It helps organisms maintain their body functions and survive.

5. **How do plants obtain the raw materials from the surroundings?**
Answer: Plants absorb water and minerals from the soil through their roots. Carbon dioxide is taken from the air through tiny pores on the leaves called stomata. These stomata are surrounded by 'guard cells' that regulate gas exchange.

6. **What is cell?**
Answer: A cell is the basic structural and functional unit of all living organisms. It is the smallest unit capable of performing life processes. Cells are the building blocks of life, making up the tissues and organs of living beings.

7. **What is the cell membrane?**
Answer: The cell membrane is the outer layer of the cell that encloses and protects the cell's contents. It regulates the movement of substances in and out of the cell, maintaining the internal environment necessary for cell function.

8. **What is tissue?**
Answer: A tissue is a group of similar cells that work together to perform a specific function in an organism. For example, vascular tissue like xylem and phloem helps in the transport of water and nutrients in plants.

9. **What are the main requirements of photosynthesis?**
Answer: The main requirements for photosynthesis are chlorophyll, sunlight, carbon dioxide, and water. These elements work together to produce glucose and oxygen.

10. **Explain the process of Photosynthesis?**
Answer: During photosynthesis, plants use sunlight to convert carbon dioxide and water into glucose (a type of carbohydrate) and oxygen. Chlorophyll present in the chloroplasts of the plant cells captures sunlight, facilitating this process.

11. **Why sun is called the ultimate source of energy for all living organisms?**
Answer: The sun is considered the ultimate source of energy because it provides the energy needed for photosynthesis, the process by which plants produce food. This stored energy is then passed through the food chain to all living organisms.

12. **Why algae are green in colour?**
Answer: Algae are green due to the presence of chlorophyll, a green pigment that allows them to capture sunlight for photosynthesis. This pigment enables them to produce their own food.

13. **What are the main components present in carbohydrates?**
Answer: Carbohydrates are composed primarily of carbon, hydrogen, and oxygen.

14. **Differentiate between nutrients and nutrition.**
Answer: Nutrients are the specific substances in food that provide energy and materials needed for growth and maintenance of the body. Nutrition, on the other hand, is the process by which these nutrients are absorbed, utilized, and used by the body to sustain life.

15. **Differentiate between autotrophs and heterotrophs.**
Answer: Autotrophs are organisms that can produce their own food from inorganic substances through processes like photosynthesis (e.g., green plants). Heterotrophs, on the other hand, cannot make their own food and must consume other organisms for nutrients (e.g., animals and humans).

Long Questions

1. **Sun is called the ultimate source of energy for all living organisms.**
Answer: The sun is considered the ultimate source of energy because it provides sunlight, which is essential for photosynthesis in plants. Plants convert this solar energy into chemical energy stored in food (glucose) during photosynthesis. This energy is then passed through the food chain to all living organisms, making the sun the primary source of energy for life on Earth.

2. **What is Symbiosis? What is Symbiotic relationship?**
Answer: Symbiosis refers to a close and long-term interaction between two different biological organisms. A **symbiotic relationship** is a specific type of symbiosis where both organisms benefit from the relationship. For example, lichen is a symbiotic relationship between an alga and a fungus where both organisms live together and help each other in obtaining nutrients and

surviving. This relationship benefits both organisms, with the alga providing food through photosynthesis and the fungus providing a structure for protection and absorption of water.

3. **Explain the two modes of nutrition in plants.**
Answer:

- **Autotrophic Nutrition:** In this mode, plants produce their own food using sunlight, carbon dioxide, and water through photosynthesis. They are called autotrophs because they can synthesize their own food. This process occurs primarily in the leaves where chlorophyll captures sunlight.
- **Heterotrophic Nutrition:** Some plants, like certain parasitic plants, obtain food from other organisms. They do not perform photosynthesis and rely on a host for nutrients. This mode includes parasitic plants like dodder (Cuscuta) that attach to other plants to derive water and nutrients, and insectivorous plants like the Venus flytrap that capture insects for nitrogen to supplement their growth.

4. **What are stomata? Explain their function.**
Answer: Stomata are tiny pores on the underside of a plant's leaves, surrounded by guard cells. They are crucial for gas exchange, allowing carbon dioxide to enter for photosynthesis and oxygen to exit as a byproduct. Stomata also facilitate transpiration, the process by which water vapor exits the leaf, helping to cool the plant and maintain its hydration.

5. **How is sunlight used by the plant for photosynthesis?**
Answer: Sunlight is absorbed by chlorophyll in the leaves, which is the green pigment responsible for capturing light energy. This energy is used to convert carbon dioxide and water into glucose and oxygen through the process of photosynthesis. Chlorophyll traps the sunlight and converts it into chemical energy, enabling the plant to produce its food.

6. **Explain how photosynthesis occurs in plants.**
Answer: Photosynthesis occurs in the chloroplasts of plant cells, primarily in the leaves. The process starts when chlorophyll absorbs sunlight. Carbon dioxide from the air and water from the soil are used to produce glucose (a type of sugar) and oxygen. This reaction, which can be summarized as $6CO2 + 6H2O + \text{light energy} \rightarrow C6H12O6 + 6O2$, represents the conversion of carbon dioxide and water into glucose and oxygen, with sunlight providing the energy needed for this reaction.

7. **How do plants obtain nutrients other than carbohydrates?**
Answer: Besides carbohydrates, plants absorb other essential nutrients from the soil. Nitrogen is absorbed as nitrates and ammonium compounds. These are made available by soil bacteria like Rhizobium that fix nitrogen from the atmosphere into a form that plants can use. Other nutrients, like phosphorus and potassium, are also taken up from the soil to support plant growth and overall health. Some plants, like insectivorous plants, derive nitrogen by trapping insects.

8. **What is the mode of nutrition in fungi?**
Answer: Fungi are heterotrophic organisms that obtain their nutrients from other organisms. They secrete digestive enzymes into their environment to break down organic matter, which they then absorb. Fungi can be saprotrophic (feeding on dead organic matter), parasitic (feeding on living hosts), or mutualistic (like lichens, where fungi live symbiotically with algae). This mode of nutrition is quite different from plants, as fungi do not perform photosynthesis.

9. **How can we demonstrate that chlorophyll is necessary for photosynthesis?**
Answer: Chlorophyll's necessity for photosynthesis can be shown by using a variegated leaf (a leaf with green and white areas). When such a leaf is exposed to sunlight and then tested with iodine, only the green areas turn blue-black, indicating the presence of starch, a product of photosynthesis. This experiment shows that chlorophyll is essential for photosynthesis since only the green parts of the leaf, containing chlorophyll, can perform the process.

10. **Why do organisms need to take food?**
Answer: Organisms need food for several reasons: to provide energy for daily activities, growth, and repair of tissues, and to maintain metabolic functions. Food also helps organisms defend against diseases by boosting their immune systems. Essentially, food provides the necessary nutrients for survival, growth, and reproduction.

11. **Distinguish between a parasite and a saprotroph.**
Answer:

- **Parasite:** A parasite lives on or inside a host organism from which it derives nutrients, usually harming the host in the process. Examples include tapeworms and some plants.
- **Saprotroph:** A saprotroph obtains its nutrients from decomposing organic matter. It breaks down dead organisms and organic waste outside its body before absorbing the nutrients. Examples include fungi and bacteria.

12. **Give a brief description of the process of synthesis of food in green plants.**
Answer: In green plants, food is synthesized through photosynthesis. Chlorophyll in leaves captures sunlight, which is used to convert carbon dioxide and water into glucose (sugar) and oxygen. The process happens in chloroplasts, specifically within the green leaves, where glucose is used by the plant for energy and growth, and oxygen is released into the atmosphere as a byproduct.

13. **Whether food is made in all parts of a plant or only in certain parts?**
Answer: Food is primarily made in the leaves of green plants through photosynthesis, where chlorophyll is present. While other green parts of the plant can also photosynthesize to a lesser degree, leaves are the main sites for food production. Roots, stems, and non-green parts do not typically perform photosynthesis.

14. **How do the raw materials transport them to the food factories of the plants?**
Answer: The transportation of raw materials like water and nutrients occurs through the vascular system of the plant. Xylem vessels transport water and minerals from the roots to the

leaves, while phloem transports the synthesized food (glucose) from the leaves to the rest of the plant. This system ensures that all parts of the plant receive necessary nutrients for growth and function.

15. **Why are leaves called the food factories of plants?**
Answer: Leaves are called the food factories of plants because they are the main sites where photosynthesis occurs. The green pigment chlorophyll in leaves captures sunlight, which is used to synthesize glucose from carbon dioxide and water. This process produces the energy that powers plant growth and sustains all living organisms that consume plant products.

Benefits of Solving Important Questions for Class 7 Science Chapter 1

Solving important questions for Class 7 Science Chapter 1 Nutrition in Plants provide several benefits to students:

Understanding Key Concepts: Important questions often focus on critical topics within the chapter, such as photosynthesis, types of nutrition (autotrophic and heterotrophic), the role of chlorophyll, and the functioning of different plant parts. Practicing these questions helps students deepen their understanding of fundamental concepts, making it easier to grasp complex ideas later on.

Improving Problem-Solving Skills: Many important questions are designed to challenge students' critical thinking and problem-solving abilities. By solving these questions, students learn to apply scientific concepts to new scenarios and develop a deeper analytical mindset.

Exam Preparation: Important questions are often included in exams, making them crucial for test preparation. Regularly solving these questions allows students to familiarize themselves with the exam format, practice answering different types of questions, and improve their time management skills during tests.

Strengthening Retention: Repeated practice of important questions aids in the retention of key concepts. This repetition reinforces learning and helps students remember crucial information better, which is particularly useful for retention in long-term memory.

Boosting Confidence: By solving important questions, students gain confidence in their understanding of the topic. They become more comfortable with their knowledge and are less likely to feel anxious during exams, knowing they are well-prepared.

Identification of Weak Areas: Attempting these questions helps students identify areas where they are weak. This allows them to focus their study efforts on those specific areas, leading to targeted revision and better overall performance.