

NCERT Solutions for Class 11 Biology Chapter 2: Here are the NCERT Solutions for Class 11 Biology Chapter 2 Biological Classification. This chapter explains the five-kingdom classification system and highlights the features of Monera, Protista, Fungi, Plantae, and Animalia. It also discusses the unique characteristics of viruses, viroids, and lichens.

These solutions provide step-by-step explanations to all textbook questions, helping students strengthen their understanding of the topic. With detailed and easy-to-follow answers, these solutions are an excellent study resource for exam preparation.

Class 11 Biology Chapter 3 NCERT Solutions Overview

The chapter Biological Classification introduces students to the five-kingdom system proposed by R.H. Whittaker, which classifies organisms into Monera, Protista, Fungi, Plantae, and Animalia. It explores the characteristics, structure, and modes of nutrition of each kingdom.

Students learn about the evolution and interrelationship of various organisms, enabling a deeper understanding of biodiversity. This chapter lays the foundation for further studies in microbiology and ecology, emphasizing the importance of systematic classification in biology.

Class 11 Biology Chapter 2 Questions and Answers PDF

Get access to the **Class 11 Biology Chapter 2 Questions and Answers PDF** through the link provided below. This resource includes detailed solutions to all the questions from the chapter Biological Classification helping students understand complex concepts with ease.

The PDF is designed to provide clear explanations, making it an essential resource for exam preparation and concept clarity. Download the PDF to strengthen your understanding of the five-kingdom classification, viruses, lichens, and more.

Class 11 Biology Chapter 2 Questions and Answers PDF

NCERT Solutions for Class 11 Biology Chapter 2 Biological Classification

Here are the NCERT Solutions for Class 11 Biology Chapter 2 Biological Classification.

1. Discuss how classification systems have undergone several changes over a period of time.

Answer:

Classification systems have evolved significantly over time. Aristotle first introduced a basic classification system using observable morphological traits, grouping plants into trees, shrubs, and herbs, and animals based on the presence or absence of red blood. Later, Linnaeus proposed a two-kingdom classification, dividing organisms into Plantae and Animalia, but this system lacked the ability to differentiate between eukaryotes and prokaryotes, unicellular and multicellular organisms, and photosynthetic and non-photosynthetic organisms. Over time, R.H. Whittaker introduced a more comprehensive five-kingdom classification system (Monera, Protista, Fungi, Plantae, and Animalia) based on cellular structure, body organization, nutrition, reproduction, and phylogeny. Subsequently, a three-domain system emerged, dividing Monera into two domains (Archaea and Bacteria), highlighting evolutionary relationships more effectively.

2. State two economically important uses of:

(a) heterotrophic bacteria

(b) archaebacteria

Answer:

(a) Heterotrophic bacteria

1. Used in the production of antibiotics, vitamins, and dairy products like cheese and curd.
2. Aid in nitrogen fixation and the formation of humus, enriching soil fertility.

(b) Archaeobacteria

1. Play a role in biogas production, especially methane.
2. Useful in bioleaching processes in mining to extract metals.

3. What is the nature of cell walls in diatoms?

Answer:

Diatoms have silica-embedded cell walls, giving them unique patterns and making them indestructible. These cell wall deposits accumulate over time to form diatomaceous earth.

4. Find out what the terms 'algal bloom' and 'red tides' signify.

Answer:

- **Algal bloom:** An overgrowth of algae, especially blue-green algae, in contaminated water. It leads to oxygen depletion and water pollution.
- **Red tides:** Caused by rapid multiplication of red-pigmented dinoflagellates (e.g., *Gonyaulax*), giving the water a red appearance. These algae produce toxins harmful to aquatic life.

5. How are viroids different from viruses?

Answer:

- Viroids consist of single-stranded RNA without a protein coat, while viruses have genetic material (RNA or DNA) encased in a protein coat.
- Viroids are much smaller in size compared to viruses.
- Viroids infect only plants, whereas viruses infect plants, animals, and microorganisms.

6. Describe the four major groups of Protozoa briefly.

Answer:

- **Amoeboid Protozoans:** Use pseudopodia for movement and capturing prey; found in aquatic environments.
- **Flagellated Protozoans:** Use flagella for movement; can be free-living or parasitic.
- **Ciliated Protozoans:** Possess cilia for locomotion and feeding; thrive in aquatic habitats.
- **Sporozoans:** Produce spores during their life cycle; often parasitic and spread through hosts.

7. Plants are autotrophic. Can you think of some plants that are partially heterotrophic?

Answer:

Some plants, such as **Utricularia** (bladderwort), **Drosera** (sundew), and **Nepenthes** (pitcher plant), are partially heterotrophic. They trap and digest insects to supplement their nitrogen needs.

8. What do the terms phycobiont and mycobiont signify?

Answer:

In lichens, the phycobiont refers to the algal partner that performs photosynthesis to produce food, while the mycobiont is the fungal partner that provides protection and structure.

9. Give a comparative account of the classes of Kingdom Fungi under the following:

Answer:

Feature	Phycomycetes	Ascomycetes	Basidiomycetes	Deuteromycetes
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Mode of Nutrition	Saprophytic or parasitic	Decomposers, saprophytic	Saprophytic	Decomposers, saprophytic
Mode of Reproduction	Asexual (zoospores, aplanospores); sexual (zygotes)	Asexual (conidia); sexual (ascospores)	Sexual (basidiospores)	Asexual (conidia)

10. What are the characteristic features of Euglenoids?

Answer:

- Lack a cell wall; have a flexible protein layer called pellicle.
- Possess two flagella of unequal lengths.
- Autotrophic in sunlight but heterotrophic in its absence.

11. Give a brief account of viruses with respect to their structure and genetic material. Name four common viral diseases.

Answer:

Viruses are non-cellular entities with genetic material (RNA or DNA) encased in a protein coat (capsid). Capsids are made of subunits called capsomers. They infect plants, animals, and microorganisms. Common viral diseases include Influenza, AIDS, Herpes, and Rabies.

12. Organise a discussion in your class on the topic 'Are viruses living or nonliving'?

Answer:

Non-living Characters

- No cellular structure
- They can be stored in bottles like crystals
- There will be no energy storage or energy liberation systems
- They cannot grow or multiply outside the host

Living Characters

- (i) They are host-specific
- (ii) The presence of genetic material
- (iii) The ability to multiply
- (iv) They have antigenic properties
- (v) They are obligate parasites
- (vi) Mutations occur

Benefits of Solving NCERT Solutions for Class 11 Biology Chapter 2

- **Strong Conceptual Understanding:** The chapter explains the classification of organisms into five kingdoms. Solving NCERT solutions helps students gain a clear understanding of concepts such as Monera, Protista, Fungi, Plantae, and Animalia, as well as viruses, viroids, and lichens.
- **Improved Retention:** Answering questions reinforces knowledge, helping students remember key points such as the features of different kingdoms and their organisms.
- **Board Exam Preparation:** NCERT-based questions are important to secure good marks in exams. Solving these solutions ensures familiarity with the question patterns and marking schemes.
- **Foundation for Competitive Exams:** This chapter lays a strong foundation for exams like NEET, where a detailed understanding of biological classification is critical.
- **Critical Thinking Development:** Answering subjective and objective questions enhances analytical and reasoning skills, which are valuable for problem-solving in biology.
- **Detailed Explanations:** NCERT solutions provide step-by-step explanations, making it easier for students to comprehend complex topics like the nature of cell walls in diatoms or the characteristics of Euglenoids.
- **Clarification of Doubts:** Detailed solutions help resolve common doubts and ensure a thorough understanding of topics that students might find challenging.
- **Enhanced Answer Writing Skills:** Practicing NCERT solutions improves the ability to write concise and well-structured answers, a skill that is essential for scoring high marks.