CBSE Important Questions for Class 10 Science Chapter 8: Chapter 8 of Class 10 Science focuses on How Do Organisms Reproduce?. This chapter explains the various methods of reproduction in living organisms, emphasizing both asexual and sexual reproduction. Understanding the concepts of gametogenesis, fertilization and the role of reproductive health is essential.

Practicing these important questions will enhance students grasp of the subject and improve their performance in board examinations.

CBSE Important Questions for Class 10 Science Chapter 8 Overview

The important questions for Class 10 Science Chapter 8 How Do Organisms Reproduce? are prepared by subject experts of Physics Wallah. By practicing these questions, students can enhance their understanding of critical concepts and improve their readiness for the board exams. The solutions provided provide clear explanations, ensuring that students grasp the material effectively.

CBSE Important Questions for Class 10 Science Chapter 8 PDF

Students preparing for the Class 10 Science board exam can access a valuable resource with the important questions from Chapter 8 How Do Organisms Reproduce?. This PDF contains a compilation of important questions that cover key concepts and themes from the chapter making it easier for students to focus their study efforts. For easy access, the PDF link is available below.

CBSE Important Questions for Class 10 Science Chapter 8 PDF

CBSE Important Questions for Class 10 Science Chapter 8 How Do Organisms Reproduce

Here we have provided CBSE Important Questions for Class 10 Science Chapter 8 How Do Organisms Reproduce-

Question 1. Newly formed DNA copies may not be identical at times. Give one reason. (AI2017)

Answer:

During DNA replication, the enzymes involved in the process can occasionally make errors, leading to mutations. These mutations may result from various factors, such as environmental influences or spontaneous changes in the DNA sequence. Consequently, while the newly formed DNA copies are generally similar, they may not be identical due to these variations introduced during replication.

Question 2. When a cell reproduces, what happens to its DNA? (AI 2017)

Answer:

When a cell reproduces, DNA replication occurs, resulting in the formation of two identical copies of its DNA. This process ensures that each daughter cell receives a complete set of genetic information, maintaining the continuity of genetic material from one generation to the next.

Question 3. What is DNA? (Delhi 2016, Foreign 2015)

Answer:

DNA (deoxyribonucleic acid) is a polymer composed of numerous nucleotide units. It serves as the hereditary material in living organisms, carrying genetic information that is passed down from one generation to the next. DNA is crucial for the development, functioning, and reproduction of all known life forms.

Question 4. Name the life process of an organism that helps in the growth of its population. (AI 2015)

Answer:

Reproduction is the life process that enables the multiplication of an organism, contributing to the growth of its population.

Question 5. Reproduction is one of the most important characteristic 'of living beings. Give three reasons in support of the statement. (AI 2017)

Answer:

Reproduction is a crucial characteristic of living beings for the following reasons:

- It is essential for the existence and continuity of a species, ensuring that life persists over time.
- It facilitates the transfer of genetic information to the next generation, maintaining the genetic lineage.
- It introduces variations in the next generation, which serve as the foundation for evolution and adaptation to changing environments.

Question 6: Define reproduction. How does it help in providing stability to the population of species? (AI 2016)

Answer:

Reproduction is the process by which existing organisms of the same species produce new organisms. It plays a critical role in stabilizing the population of a species by ensuring continuity. DNA replication during reproduction allows for the transfer of specific traits necessary for survival, helping individuals adapt to their ecological niches. Additionally, variations that arise through reproduction can enhance the population's ability to survive in changing environments.

Question 7: What is DNA copying? State its importance. (Delhi 2015)

Answer:

DNA copying is the process of producing similar copies of DNA within a cell through a series of chemical reactions. This process is vital for reproduction, as it enables organisms to pass on their genetic traits to their offspring. Furthermore, minor alterations during DNA copying lead to variations that can enhance the species' adaptability and survival over time.

Question 8: What is the effect of DNA copying, which is not perfectly accurate, on the reproduction process? How does the amount of DNA remain constant through each new generation as a combination of DNA copies of two individuals? (AI 2014)

Answer:

If DNA copying is not perfectly accurate, it results in variations that can allow certain individuals within a population to thrive in altered environments, serving as a basis for evolution. These variations are advantageous for the survival of the species over time. During sexual reproduction, DNA from two individuals combines. Meiosis, or reduction division, halves the chromosome number in both male and female gametes. When these gametes fuse during fertilization, the original chromosome number is restored in the offspring, ensuring that the amount of DNA remains constant across generations.

Question 9: Name the method by which Spirogyra reproduces under favorable conditions. Is this method sexual or asexual? (Delhi 2017)

Answer:

Spirogyra reproduces through the method of **fragmentation** under favorable conditions. This is an **asexual mode of reproduction**.

Question 10: How does Plasmodium reproduce? Is this method sexual or asexual? (Delhi 2017)

Answer:

Plasmodium reproduces by the method of **multiple fission**. In this process, the parent organism splits to form many new organisms simultaneously. This is an **asexual method of reproduction**.

Question 11: Name the part of Bryophyllum where the buds are produced for vegetative propagation. (Delhi 2016)

Answer:

Bryophyllum propagates vegetatively through **buds produced at the margins of its leaves**.

Question 12: What happens when a Planaria gets cut into two pieces? (Delhi 2016)

Answer:

When Planaria is cut into two pieces, each piece is capable of growing into a complete organism. This process is known as **regeneration**.

Question 13: What happens when a mature Spirogyra filament attains considerable length? (AI 2016)

Answer:

When a mature Spirogyra filament attains considerable length, it **breaks into two or more fragments**, and each fragment grows into a new Spirogyra.

Question 14: Name the method by which Hydra reproduces. Is this method sexual or asexual? (Foreign 2016)

Answer:

Hydra primarily reproduces through **budding**, which is an **asexual method of reproduction**.

Question 15: Name two simple organisms having the ability of regeneration. (AI 2015)

Answer:

Hydra and **Planaria** are two organisms that possess the ability to regenerate.

Question 16: Name the causative agent of the disease "kala-azar" and its mode of asexual reproduction. (Foreign 2015)

Answer:

The causative agent of the disease **kala-azar** is **Leishmania**, which reproduces asexually by **binary fission**.

Question 17: Write two differences between binary fission and multiple fission in a tabular form. (Delhi 2015)

Binary Fission	Multiple Fission
(i) The parent organism splits to form two new organisms (e.g., Amoeba, Paramecium).	(i) The parent organism splits to form many new organisms at the same time (e.g., Plasmodium).
(ii) The nucleus of the parent body divides only once to produce two nuclei.	(ii) The nucleus of the parent body divides repeatedly to produce many nuclei.

Question 18: List four modes of asexual reproduction other than fission in living organisms. (Delhi 2014)

Answer:

The four modes of asexual reproduction other than fission in living organisms are:

1. **Budding**
2. **Spore formation**
3. **Regeneration**
4. **Fragmentation**

Question 19: List four advantages of vegetative propagation. (Delhi 2014)

Answer:

The advantages of vegetative propagation include:

1. The characters of the parent plants are preserved, allowing for the propagation of good varieties.
2. Plants that do not produce viable seeds or produce very few seeds can be reproduced by this method (e.g., banana, potato, grapes).
3. It is an easier, quicker, and cheaper method of propagation.
4. It is easier to eliminate pathogens from any part of the plant through vegetative propagation.

Question 20: List four modes of asexual reproduction. (Delhi 2014)

Answer:

The four modes of asexual reproduction are:

1. **Binary fission**
2. **Budding**

3. **Regeneration**
4. **Vegetative propagation**

Question 21: Draw labeled diagrams to illustrate budding in Hydra. (AI 2014)

Answer:

Unfortunately, I cannot create diagrams, but I can describe the process. In Hydra, budding occurs when a small outgrowth forms on the parent organism, eventually developing into a new individual. This outgrowth is attached to the parent until it matures and detaches.

Question 22: How do Plasmodium and Leishmania reproduce? Write one difference in their mode of reproduction. (Foreign 2014)

Answer:

Both Plasmodium and Leishmania reproduce asexually.

- **Plasmodium** reproduces by **multiple fission**, producing approximately 1000 daughter cells simultaneously.
- **Leishmania** reproduces by **binary fission**, where the parent cell splits longitudinally to produce two daughter cells.

Difference:
Plasmodium undergoes multiple fission, resulting in many offspring at once, while Leishmania reproduces by binary fission, producing two offspring at a time.

Question 23: Define multiple fission. Give its one example. (Foreign 2014)

Answer:

Multiple fission is an asexual mode of reproduction in which the parent organism splits to form many new organisms at the same time. An example of multiple fission occurs in **Plasmodium**.

Question 24: List two advantages of vegetative reproduction practiced in the case of an orange plant. (Delhi 2012)

Answer:

The two advantages of vegetative propagation in orange plants are:

1. New plants produced will be genetically identical to the parent plant, replicating desirable traits.
2. Orange plants that have lost the ability to produce seeds can still be propagated using vegetative methods.

Question 25: Name an organism that reproduces by spore formation. List three conditions favorable for spores to germinate and grow. (AI 2012)

Answer:

Rhizopus reproduces by the method of spore formation.
The three favorable conditions for spores to germinate and grow are:

1. **Moisture**
2. **Suitable temperature**
3. **Food (nutrition)**

Question 26: List two advantages of practicing vegetative propagation in plants. Select two plants raised by this method from the list given below: Banana, Gram, Pea, Rose, Tomato, Wheat. (Foreign 2012)

Answer:

Two advantages of vegetative propagation are:

1. Desirable features of the parent plant can be replicated in the new plants.
2. Flowers and fruits can be produced in a shorter time compared to seed-grown plants.
   The two plants raised by this method are **banana** and **rose**.

Question 27: Write any two differences between binary fission and multiple fission in a tabular form as observed in cells of organisms. (Delhi 2011)

Answer:

Binary Fission	Multiple Fission
(i) The parent organism splits to form two new organisms (e.g., Amoeba, Paramecium).	(i) The parent organism splits to form many new organisms at the same time (e.g., Plasmodium).
(ii) The nucleus of the parent body divides only once to produce two nuclei.	(ii) The nucleus of the parent body divides repeatedly to produce many nuclei.

Question 28: List any four reasons for vegetative propagation being practiced in the growth of some types of plants. (AI 2011)

Answer:

Refer to the advantages listed in **Question 19**. The reasons include:

1. Preservation of desirable traits of parent plants.

2. Ability to propagate plants that do not produce viable seeds.
3. Speed and cost-effectiveness of the propagation method.
4. Elimination of pathogens from plant parts.

Question 29: What is vegetative propagation? Write two of its advantages. (Foreign 2011)

Answer:

Vegetative propagation is a method of asexual reproduction in plants where parts other than seeds are used as propagules.
Two advantages of vegetative propagation include:

1. Replication of desirable features of the parent plant.
2. Faster flowering and fruiting compared to seed-grown plants.

Question 30: Write one main difference between asexual and sexual modes of reproduction. Which species is likely to have comparatively better chances of survival – the one reproducing asexually or the one reproducing sexually? Give a reason to justify your answer. (2018)

Answer:

Difference:

- **Asexual reproduction:** No gametes are formed; fertilization does not take place.
- **Sexual reproduction:** Gametes are formed, and fertilization occurs, leading to the formation of a zygote.

Species reproducing **sexually** have better chances of survival because variations occur during sexual reproduction. These variations enhance adaptability to changing environments, increasing the likelihood of survival and evolution over time.

Benefits of CBSE Important Questions for Class 10 Science Chapter 8

- **Understanding Exam Format**: Familiarizing themselves with the format and types of questions asked in previous exams helps students grasp how to approach similar questions in their own exams.
- **Improved Time Management**: By practicing these important questions, students can learn to manage their time effectively ensuring they can complete the exam within the allotted time.
- **Enhanced Problem-Solving Skills**: Regularly working on these questions helps students develop critical thinking and problem-solving skills which are important for success in exams.

- **Increased Confidence**: Mastering these questions builds confidence in students knowledge and abilities, reducing exam anxiety and enhancing their overall performance.

- **Identification of Weak Areas**: Practicing important questions enables students to identify their weak areas, allowing them to focus on topics that require additional attention before the exam.