12 How Nature Works in Harmony

Fill in the Blanks

1. A group of similar organisms living together is called a _____.
2. Plants that make their own food are called _____.
3. The interconnected food chains form a _____.
4. Fungi and bacteria that break down waste are called _____.
5. A relationship where both organisms benefit is _____.
6. The Sundarbans have the world's largest _____.
7. Organisms that eat both plants and animals are called _____.
8. Excessive use of _____ can reduce beneficial insects.
9. Growing the same crop repeatedly is known as _____.

Multiple Choice Questions (MCQs)

1. Which of the following is a biotic component?
a) Air b) Soil c) Fish d) Sunlight

2. A group of the same species living in a habitat is called:
a) Community b) Ecosystem c) Population d) Biosphere

3. Which organism is a producer?
a) Deer b) Grass c) Frog d) Snake

4. Which of the following is an example of a herbivore?
a) Tiger b) Fox c) Deer d) Eagle

5. Which trophic level do producers occupy?
a) First b) Second c) Third d) Last

6. Food webs are more stable than food chains because:
a) They are shorter b) They involve fewer organisms
c) They provide alternative food paths d) They are artificial

7. Which of the following is a decomposer?
a) Grass b) Mushroom c) Frog d) Eagle

8. Which relationship benefits both organisms?
a) Parasitism b) Commensalism c) Mutualism d) Competition

9. Orchids growing on trees is an example of:
a) Parasitism b) Mutualism c) Commensalism d) Competition

10. Which organism eats insects and helps control pest population?
a) Frog b) Grass c) Snake d) Mushroom

11. Which ecosystem includes ponds and lakes?
a) Terrestrial b) Forest c) Desert d) Aquatic

12. The Sundarbans are important because they:
a) Increase pollution b) Reduce rainfall
c) Protect coastal regions d) Cause erosion

13. Which farming practice is considered unsustainable?
a) Excessive pesticide use b) Organic manure c) Crop rotation d) Composting

14. Which of the following is a carnivore?
a) Cow b) Rabbit c) Eagle d) Grasshopper

15. Decomposition helps in:
a) Producing oxygen b) Recycling nutrients
c) Increasing pollution d) Killing plants

Short Answer Questions

Q1. What are abiotic components? Give two examples.

Q2. Why is a pond called an aquatic ecosystem?

Q3. What is meant by coexistence of organisms?

Q4. How does sunlight affect living organisms?

Q5. Why do elephants enter farms and villages?

Q6. What are wildlife corridors? Why are they important?

Long Answer Questions

Q1. Explain the role of abiotic components in an ecosystem.

Q2. Describe how a pond ecosystem maintains balance.

Q3. Explain the importance of decomposers in nature.

Q4. How does the loss of one species affect an ecosystem?

Q5. How do human activities disturb ecosystems?

Q6. Explain the importance of mangroves using the Sundarbans example.

Q7. Explain types of interactions among organisms with examples.

Q8. Why is sustainable farming necessary?

Answers

Fill in the Blanks

1. population
2. producers
3. food web
4. decomposers
5. mutualism
6. mangrove forests
7. omnivores
8. pesticides
9. monoculture

Multiple Choice Questions (MCQs)

1. c) Fish
2. c) Population
3. b) Grass
4. c) Deer
5. a) First
6. c) They provide alternative food paths
7. b) Mushroom
8. c) Mutualism
9. c) Commensalism
10. a) Frog
11. d) Aquatic
12. c) Protect coastal regions
13. a) Excessive pesticide use
14. c) Eagle
15. b) Recycling nutrients

Short Answer Questions

Q1. What are abiotic components? Give two examples.
Abiotic components are the non-living parts of a habitat that affect living organisms.
Examples: air, water, soil, sunlight, temperature.

Q2. Why is a pond called an aquatic ecosystem?
A pond is called an aquatic ecosystem because organisms living in it depend on water for survival, and both biotic and abiotic components interact in water.

Q3. What is meant by coexistence of organisms?
Coexistence means different organisms living together in the same habitat by using resources in different ways without harming each other.

Q4. How does sunlight affect living organisms?
Sunlight helps plants prepare food through photosynthesis and influences temperature, which affects the activity of animals.

Q5. Why do elephants enter farms and villages?
Elephants enter human areas due to loss of forest cover, lack of food and water, and changes in rainfall patterns.

Q6. What are wildlife corridors? Why are they important?
Wildlife corridors are protected pathways connecting forest areas.
They allow animals to move safely without entering human settlements and help reduce conflicts.

Long Answer Questions

Q1. Explain the role of abiotic components in an ecosystem.
- Abiotic components support life processes of organisms.
- Sunlight helps plants make food.
- Water is essential for growth and metabolism.
- Soil provides nutrients and support to plants.
- Air supplies oxygen and carbon dioxide.
- Temperature affects activity and survival.
- Without abiotic components, life cannot exist.

Q2. Describe how a pond ecosystem maintains balance.
- A pond ecosystem has producers, consumers, and decomposers.
- Plants prepare food, fish and insects consume plants or other animals, and decomposers recycle nutrients.
- Predators control population size.
- All these interactions maintain ecological balance.

Q3. Explain the importance of decomposers in nature.
- Decomposers break down dead plants and animals into simpler substances.
- They return nutrients to the soil, improving fertility.
- Plants absorb these nutrients, completing the nutrient cycle.
- Without decomposers, waste would accumulate and ecosystems would collapse.

Q4. How does the loss of one species affect an ecosystem?
- If frogs disappear, insects increase and crops are damaged.
- Farmers use pesticides, harming soil and water.
- This chain reaction shows every organism is important.

Q5. How do human activities disturb ecosystems?
- Deforestation destroys habitats
- Pollution harms water and soil
- Pesticides kill useful organisms
- Overfishing reduces fish population
- These actions disturb natural balance and biodiversity.

Q6. Explain the importance of mangroves using the Sundarbans example.
- Mangroves protect coastal regions by reducing storm impact.
- They prevent soil erosion and absorb carbon dioxide.
- The Sundarbans support rich biodiversity and protect human settlements from floods and cyclones.

Q7. Explain types of interactions among organisms with examples.
- Mutualism: Bee and flower (both benefit)
- Commensalism: Orchid on tree (one benefits, other unaffected)
- Parasitism: Tick on dog (one benefits, one harmed)
- These interactions help maintain balance in nature.

Q8. Why is sustainable farming necessary?
- Unsustainable farming degrades soil and harms ecosystems.
- Sustainable farming uses organic manure, crop rotation, and natural pest control.
- It protects soil health, biodiversity, and ensures long-term food security.