CLASS 8 · SCIENCE

How Nature Works in Harmony

Sample paper · 15 questions · 22 marks

10 objective questions × 1 mark. Five written-response questions: 12 marks. Write your working where needed. Suggested time: 45 minutes. Answers and marking guidance follow the questions.

Original Evater practice material aligned with these school topics. Not an official NCERT paper or marking scheme. No automatic grading is implied.

Section A · Objective questions (10 marks)

1. All the members of one kind of organism living in an area together form:

A. an ecosystem

B. a food web

C. a community

D. a population

2. A community of living organisms together with the non-living surroundings forms:

A. a population

B. an ecosystem

C. a habitat only

D. a food chain

3. In most ecosystems, the producers are:

A. herbivores

B. decomposers

C. green plants

D. carnivores

4. The main role of decomposers such as bacteria and fungi is to:

A. break down dead matter and recycle nutrients

B. pollinate flowers

C. hunt other animals

D. produce oxygen by photosynthesis

EVATER

5. A food-web diagram shows both small fish and insects being eaten by a bird. What is the best reason to draw both feeding links?

A. The bird may use more than one food source

B. Energy flows only from birds to plants

C. All organisms occupy the same feeding level

D. Every bird eats every organism

6. Which of these is a non-living (abiotic) component of an ecosystem?

A. Sunlight

B. Fungus

C. Deer

D. Grass

7. A coastal district plants mangroves along its shore to reduce damage from storm surges. This works mainly because mangroves:

A. have dense roots and trunks that act as a barrier slowing incoming waves

B. attract rain clouds away from the coast

C. release oxygen that cools the sea

D. make the soil salty so waves avoid it

8. A food web is best described as:

A. a single straight chain of eating

B. many interlinked food chains

C. a list of decomposers only

D. a type of spider's web

9. A compost heap becomes very dry. Leaf breakdown slows, although microbes are still present. Which conclusion is best supported?

A. Dryness turns leaves into elements

B. Abiotic conditions can affect decomposer activity

C. Decomposers are unnecessary

D. All the microbes have vanished

10. Which of these is a human-made ecosystem?

A. An agricultural field

B. A mangrove forest

C. A mountain river

D. A natural pond

EVATER

Section B · Written responses (12 marks)

Attempt all five. Use a separate sheet if you need more space. The marks for each question are shown.

11. A grower removes all fallen leaves from one garden bed but returns well-decomposed leaf compost to another. Explain why the second practice can help nutrient recycling, and identify the group that made the compost. [2 marks]

12. What is the difference between a population and a community? Give one example of each. [2 marks]

13. A coastal planning team lists two benefits of a mangrove belt: shelter for young fish and reduced wave energy near the shore. Explain why one belt can supply both benefits without claiming that it stops every storm. [2 marks]

14. A bird eats both seed-eating insects and fruit. The insects feed on plants. Write two food chains ending with the bird, explain why together they form part of a food web, and state why one missing food source need not make the bird disappear immediately. [3 marks]

15. In a school plot, bean plants grow beside flowering herbs. Bees visit the herbs and bean flowers. A plan would replace every plant with one crop and spray a broad insecticide. Identify two possible ecological costs and propose one lower-impact alternative. [3 marks]

EVATER

Answers & marking guidance

Use these after attempting the paper. Accept equivalent correct reasoning and sensible units. These are Evater model answers, not an official marking scheme.

Section A · 1 mark each

1. D — A population is all the individuals of one species in an area.

2. B — An ecosystem includes both the living community and the non-living (abiotic) environment.

3. C — Green plants make their own food by photosynthesis, producing food for the rest of the ecosystem.

4. A — Decomposers break down dead organisms and waste, returning nutrients to the soil for producers to use.

5. A — A food web shows alternative and interconnected feeding relationships rather than one single route.

6. A — Sunlight is a non-living component; the others are living organisms.

7. A — Dense mangrove trees and roots slow and break up incoming waves, shielding the land behind them.

8. B — In nature most organisms eat and are eaten by more than one species, linking food chains into a web.

9. B — Water availability is a non-living condition that can affect the activity of decomposers. Slow breakdown alone does not prove they have vanished.

10. A — A farm field is created and maintained by people, with chosen crops replacing natural vegetation.

EVATER

Section B · Model answers

11. Bacteria, fungi and other decomposer organisms break down the leaves. Returning decomposed material helps return mineral nutrients to the soil, where plants can use them again. This does not mean compost guarantees every nutrient a plant needs.

Marking: 1 mark for decomposers; 1 mark for the dead-material-to-soil-to-plant nutrient link.

12. A population is all the individuals of one species in an area, for example all the neem trees in a park. A community is all the different populations of organisms living together in that area, for example the park's trees, birds, insects, fungi and grass together.

Marking: 1 mark for correct definitions; 1 for a valid example of each.

13. The roots and shallow sheltered water provide habitat for young fish. Dense vegetation and roots can dissipate some wave energy. Protection depends on storm strength, water depth and the belt, so mangroves do not guarantee that flooding or damage is prevented.

Marking: 1 mark for the habitat explanation; 1 mark for wave-energy reduction with a sensible limit.

14. Chains: plants ->insects ->bird, and fruit-producing plants ->bird. They are linked through the bird and plants, so they are part of a food web. The bird has an alternative food source; its response also depends on food availability and other conditions.

Marking: 1 mark for both valid chains; 1 mark for explaining their shared links; 1 mark for the alternative-food explanation.

15. Replacing the mixed planting can reduce habitat and food variety. A broad insecticide can kill pollinators as well as pests, which may affect pollination. An alternative is to retain flowering strips and use targeted pest management, or another justified measure that reduces non-target harm.

Marking: 1 mark for loss of plant/habitat variety; 1 mark for a pollinator or other non-target effect; 1 mark for a justified lower-impact alternative.

Topic references

NCERT Class 8 Science, Curiosity, Chapter 12: How Nature Works in Harmony.

https://ncert.nic.in/textbook/pdf/hecu112.pdf

Concept reference only. Questions and model answers are original Evater practice material, not an official NCERT paper.

Questions, contexts, values, options and model answers in this edition were written for Evater. Source references support the concepts; textbook exercises, illustrations and third-party question-bank wording are not reproduced. Edition: 16 November 2026.

EVATER