Unit 4 · Ecology

WORKSHEET

Full marks 45.5

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 45.5

1 Key words [4]

Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

biosphere	**community**	**detritivores**	**detritus**	**habitat**	**hydrophytes**	**keystone**	**niche**	**peat**	**population**

All the organisms of one species living in an area at one time are a _____. All the populations of a place are a _____. Where an organism lives is its _____, and its whole way of life there is its _____. Dead matter that decomposers feed on is called _____. A species whose loss changes a whole ecosystem, much more than its share of the living things there, is a _____ species. Small animals such as earthworms that eat dead matter are _____. Plants adapted to living in water or waterlogged soil are _____.

2 Multiple choice [6]

Choose the correct option for each of the following questions.

i. The term "ecology" was first used by: [1]

a. Arthur Tansley **b.** Ernst Haeckel
c. Charles Darwin **d.** Robert Hooke

ii. In the food chain grass → rabbit → fox, most of the foxes are killed. What happens to the grass? [1]

a. it increases, because the rabbits decrease
b. it decreases, because the rabbits increase
c. it increases, because fewer foxes trample it
d. it is not affected, because foxes don't eat grass

iii. Which of these are true decomposers? [1]

a. earthworms and termites **b.** vultures and jackals
c. bacteria and fungi **d.** algae and mosses

iv. Which decomposers can break down lignin, the substance that makes wood hard? [1]

a. all bacteria **b.** earthworms
c. certain fungi **d.** viruses

v. A gas given out by the anaerobic decomposition of organic matter in a flooded paddy field is: [1]

a. oxygen **b.** methane
c. ozone **d.** chlorine

vi. Nepal's first Ramsar site, listed in 1987, is: [1]

a. Rara Lake **b.** Phewa Lake
c. Koshi Tappu **d.** Gosaikunda

3 Match the columns [2.5]

Match each step of decomposition with what happens in it. One description in Column B is not needed. Each carries 0.5 mark.

Column A		Column B
1. fragmentation	☐	**a.** water carries soluble substances down into the soil
2. leaching	☐	**b.** resistant remains form a dark, crumbly substance
3. catabolism	☐	**c.** detritivores chew dead matter to pieces
4. humification	☐	**d.** enzymes break large molecules into small ones
5. mineralization	☐	**e.** green plants make food from sunlight
		f. inorganic salts are released for roots

4 True or false [3]

Write T for a true statement and F for a false one. Correct each false statement. Each carries 0.5 mark.

i. Materials flow one way through an ecosystem and energy cycles. ☐

ii. A paddy field is an artificial ecosystem and a wetland. ☐

iii. Vultures are decomposers. ☐

iv. Most fungi need oxygen. ☐

v. Anaerobic decomposition is faster and more complete than aerobic decomposition. ☐

vi. A lotus floats freely with its roots hanging in the water. ☐

5 Very short answers [3]

Write very short answers to the following questions.

a. What is the term for the chain of effects that tumbles down the feeding levels of an ecosystem? [1]

b. On which date is World Wetlands Day? [1]

c. Name the painkiller that killed most of South Asia's vultures. [1]

6 Short answers [10]

Write short answers to the following questions.

a. Give a reason: a food web is more stable than a single food chain. [2]

b. Give a reason: bacteria and fungi are called decomposers, but earthworms are not. [2]

c. Give a reason: wetlands are called the kidneys of the landscape. [2]

d. Give a reason: dead plants in a peat bog or a deep swamp decompose very slowly. [2]

e. Write any two reasons why wetlands matter to people or wildlife, and any two threats to them. [2]

7 Long answers [10]

Write long answers to the following questions.

a. What is decomposition? Describe its steps. **[6]**

b. Describe, with the help of a food chain, the effects of a decrease in the population of one species on the others. **[4]**

8 Working it out [4]

Solve the following problem. Show your working.

Anjila put three net bags of dry sal leaves, 25.0 g each, in different places and weighed the dried leaves after eight weeks: on moist soil under a hedge, 17.5 g; on dry, sunny ground, 23.0 g; inside a compost heap, 11.5 g. Find the percentage of mass lost in each place, and explain the differences.

Answer:

9 Think [3]

Sudip says, “Vultures are decomposers, because they clean up dead animals.” Is he right? What happened in South Asia when the vultures disappeared?

10 Activity: Observe an ecosystem (not marked)

With your teacher, choose a small area near your school, about 5 m by 5 m. Spend 20 minutes looking quietly, without catching or harming anything, and fill in the table. Go with an adult and keep away from nettles, wasps’ nests and deep water.

Producers	Primary consumers	Secondary consumers	Tertiary consumers	Decomposers (and signs of them)	Abiotic factors

One food chain from your area:

What would happen to two of the animals if one population decreased?