

# CREST Science Olympiad (CSO) Worksheet *for* Class 8



Topic

## Micro-Organisms



@crestolympiads



info@crestolympiads.com



+91-98182-94134

# Worksheet on Micro-Organisms

## 1. Match the following microbes with their impacts:

	Column I		Column II
1.	Saccharomyces cerevisiae	A.	Forms a symbiotic relationship with legume plants, fixing nitrogen in the soil.
2.	Lactobacillus	B.	Produces antibiotic that fights bacterial infections.
3.	Penicillium notatum	C.	Helps in the production of bread and alcoholic beverages.
4.	Rhizobium spp.	D.	Used in the production of yoghurt and other fermented foods.

- a. 1:A, 2:B, 3:C, 4:D
- b. 1:D, 2:C, 3:B, 4:A
- c. 1:C, 2:D, 3:B, 4:A
- d. 1:B, 2:D, 3:A, 4:C

## 2. Select the incorrect statement about the microorganism shown in the picture below.



- a. It undergoes asexual reproduction.
- b. It is related to plants as it contains chlorophyll to carry out photosynthesis.
- c. It is commonly found in freshwater environments such as ponds, lakes, and slow-moving streams.
- d. It is a type of algae.

## 3. Consider the following statements and choose the correct option:

**Statement 1: Viruses can replicate and multiply outside the host cells.**

**Statement 2: Viruses are considered living organisms.**

- a. Statement 1 is correct, but statement 2 is incorrect.
- b. Statement 1 is incorrect, but statement 2 is correct.
- c. Both statements are correct.
- d. Both statements are incorrect.

4. In the following question, you will find an assertion and a reason. Select the appropriate option that applies.

**Assertion:** Nitrogen fixation is essential for maintaining soil fertility and supporting plant growth.

**Reason:** Nitrogen-fixing bacteria convert atmospheric nitrogen into usable forms, such as ammonia, which can be absorbed by plants to synthesise proteins and other essential molecules.

- a. Both the assertion and reason are correct, and the reason is the correct explanation of the assertion.
  - b. Both the assertion and reason are correct, but the reason is NOT the correct explanation of the assertion.
  - c. The assertion is correct, but the reason is incorrect.
  - d. The assertion is incorrect, but the reason is correct.
5. In an experiment, a student wants to demonstrate the process of fermentation. Which microorganism will be most suitable for this experiment?
- a. Bacteria
  - b. Algae
  - c. Fungi
  - d. Protozoa

### Answer Key

1. c - *Saccharomyces cerevisiae* is a type of yeast that is used in the production of bread and alcoholic beverages.  
*Lactobacillus* is a type of bacteria commonly found in fermented foods like yoghurt and other dairy products.  
*Penicillium notatum* is a type of fungus known for producing the antibiotic penicillin.  
*Rhizobium* is a group of bacteria that form a symbiotic relationship with legume plants, such as peas, beans, and clover. These bacteria infect the roots of legume plants and convert atmospheric nitrogen into a usable form for the plants through a process called nitrogen fixation.
2. b - *Spirogyra* is indeed a type of algae and contains chlorophyll for photosynthesis, but it is not directly related to plants. Algae are considered plant-like microorganisms, but they are a distinct group from true plants and do not have the same complex structures as roots, stems, and leaves found in higher plants.
3. d - Statement 1 is incorrect because viruses cannot replicate and multiply outside the host cells. They are obligate intracellular parasites, meaning they need a host cell to reproduce and multiply.  
Statement 2 is incorrect because viruses are not considered living organisms. While they can exhibit some life-like characteristics when inside a host cell, they lack the essential attributes of living organisms.

4. a - Both the assertion and reason are correct, and the reason is the correct explanation of the assertion.  
The assertion states that nitrogen fixation is essential for maintaining soil fertility and supporting plant growth, which is true. Nitrogen fixation is a critical process as it converts atmospheric nitrogen into forms that plants can use for their growth and development. The reason provided explains why nitrogen fixation is essential. Nitrogen-fixing bacteria play a crucial role in this process by converting atmospheric nitrogen into ammonia or other nitrogenous compounds that plants can absorb through their roots to synthesise proteins and other essential molecules.
5. c - Fungi are the most suitable microorganisms for demonstrating the process of fermentation. Fermentation is a metabolic process in which sugars are converted into alcohol or organic acids in the absence of oxygen. This process is commonly carried out by certain species of fungi, such as yeast, which are used in baking and brewing.

**More Questions Coming Soon – Keep Learning!**





# Difference between Ordinary & Extra-Ordinary is that "Little Extra"

## Discover Our Ultimate Prep Kits!

### Buy Previous Years Papers

1. Login at [www.crestolympiads.com/login](http://www.crestolympiads.com/login)
2. Go to Dashboard -> Additional Practice -> Buy



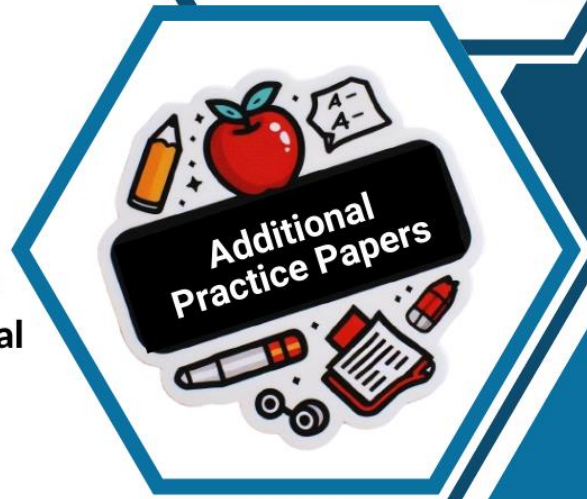
### Buy Physical & Digital Workbooks at

<https://www.crestolympiads.com/olympiad-books>



### Buy Additional Practice

1. Login at [www.crestolympiads.com/login](http://www.crestolympiads.com/login)
2. After login, go to Dashboard -> Additional Practice -> Buy



@crestolympiads



info@crestolympiads.com



+91-98182-94134