

Exercise Questions

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1. Fill in the blanks.

- (a) Microorganisms can be seen with the help of a \_\_\_\_\_.
- (b) Blue-green algae fix \_\_\_\_\_ directly from the air and enhance the fertility of the soil.
- (c) Alcohol is produced with the help of \_\_\_\_\_.
- (d) Cholera is caused by \_\_\_\_\_.

Soln:

- a) Microscope
- b) Nitrogen
- c) Yeast
- d) Bacteria- *Vibrio cholera*

2. Tick the correct answer.

- (a) Yeast is used in the production of
  - (i) sugar (ii) alcohol (iii) hydrochloric acid (iv) oxygen
- (b) The following is an antibiotic
  - (i) Sodium bicarbonate (ii) Streptomycin (iii) Alcohol (iv) Yeast
- (c) Carrier of malaria-causing protozoan is
  - (i) female Anopheles mosquito (ii) cockroach (iii) housefly (iv) butterfly
- (d) The most common carrier of communicable diseases is
  - (i) ant (ii) housefly (iii) dragonfly (iv) spider
- (e) The bread or idli dough rises because of
  - (i) heat (ii) grinding (iii) growth of yeast cells (iv) kneading
- (f) The process of conversion of sugar into alcohol is called
  - (i) nitrogen fixation (ii) moulding (iii) fermentation (iv) infection

Soln:

- a) (ii) alcohol
- b) (ii) Streptomycin
- c) (i) female Anopheles mosquito
- d) (ii) housefly
- e) (iii) growth of yeast cells
- f) (iii) fermentation

3. Match the organisms in Column A with their action in Column B.

A	B
(i) Bacteria	(a) Fixing nitrogen
(ii) Rhizobium	(b) Setting of curd
(iii) Lactobacillus	(c) Baking of bread
(iv) Yeast	(d) Causing malaria
(v) A protozoan	(e) Causing cholera
(vi) A virus	(f) Causing AIDS
	(g) Producing antibodies

Sol:-

A	B
(i) Bacteria	(e) Causing cholera
(ii) Rhizobium	(a) Fixing nitrogen
(iii) Lactobacillus	(b) Setting of curd
(iv) Yeast	(c) Baking of bread

(v) A protozoan	(d) Causing malaria
(vi) A virus	(f) Causing AIDS

**4. Can microorganisms be seen with the naked eye? If not, how can they be seen?****Soln:**

Microorganisms cannot be seen by the naked eye because they are very small. They can be seen by using a microscope.

**5. What are the major groups of microorganisms?****Soln:**

The major groups of microorganisms are as follows:

1. Bacteria
2. Fungi
3. Protozoans
4. Algae
5. Viruses

**6. Name the microorganisms which can fix atmospheric nitrogen in the soil.****Soln:**

Rhizobium

**7. Write 10 lines on the usefulness of microorganisms in our lives.****Soln:**

The uses of microorganisms are listed below.

- They are helpful in cleaning up the environment. For example, organic wastes (vegetable peels, remains of animals, faeces, etc.) are broken down into harmless and usable substances by bacteria.
- Curd contains several microorganisms. Of these, the bacterium, *Lactobacillus* promotes the formation of curd. It multiplies in milk and converts it into curd.
- Bacteria are also involved in the making of cheese, pickles and many other food items.
- Bacteria and yeast are also helpful for the fermentation of rice idlis and dosa batter.
- Yeast reproduces rapidly and produces carbon dioxide during respiration. Bubbles of gas fill up the dough and increase its volume. This is the basis of the use of yeast in the baking industry for making bread, pastries and cakes.
- Microorganisms are used for the large-scale production of alcohol, wine and acetic acid (vinegar).
- Antibiotics are produced from bacteria and fungi.

- Microorganisms are helpful in producing vaccines against disease-causing agents.
- Some bacteria (Fig. 2.7) are able to fix nitrogen from the atmosphere to enrich the soil with nitrogen and increase its fertility.
- Microorganisms decompose dead organic waste of plants and animals to convert them into simple substances. These substances are again used by other plants and animals. Thus, microorganisms can be used to degrade harmful and smelly substances and thereby clean up the environment.

**8. Write a short paragraph on the harmful effects of microorganisms.**

**Soln:**

Microorganisms cause diseases in plants and animals. For example, Cholera in humans is caused by bacteria called *Vibrio cholera*. In animals, the virus causes foot and mouth diseases. Microorganisms spoil food by decomposing the food material. Some microorganisms spoil leather and clothes. Microorganisms are also responsible for food poisoning.

**9. What are antibiotics? What precautions must be taken while taking antibiotics?**

**Soln:**

Chemical agents that kill or stop the growth of disease-causing microorganisms are called antibiotics. Antibiotics should be taken only on the advice of a qualified doctor. Also, one must complete the course prescribed by the doctor.