

CBSE Class –VIII Science
NCERT SOLUTION
Chapter-2
Microorganisms: Friend and Foe

1. Fill in the blanks.

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

Ans. Fill in the blanks.

- (a) Microorganisms can be seen with the help of a **microscope**.
- (b) Blue-green algae fix **nitrogen** directly from air to enhance fertility of soil.
- (c) Alcohol is produced with the help of **yeast**.
- (d) Cholera is caused by a **bacteria**.

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.

Ans. (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 curd
(iii) Lactobacillus	(c) Baking bread
(iv) Yeast	(d) Causing malaria
(v) A protozoan	(e) Causing cholera
(vi) A virus	(f) Causing AIDS
	(g) Producing antibodies

Ans. Match the following:-

Column A	Column B
(i) Bacteria	(e) Causing cholera
(ii) Rhizobium	(a) Fixing nitrogen

(iii) Lactobacillus	(b) Setting curd
(iv) Yeast	(c) Baking bread
(v) A protozoan	(d) Causing malaria
(vi) A virus	(f) Causing AIDS

4. Can microorganisms be seen with the naked eyes? If not, how can they be seen?

Ans. Microorganisms are too small so they cannot be seen with naked eye. They can be seen with the help of a magnifying glass or microscope.

5. What are the major groups of microorganisms?

Ans. The major groups of microorganisms are:

- **Bacteria:** They are single celled disease causing microorganisms. They can be spiral or rodshaped.
- **Fungi:** They are mostly multicellular disease causing microbes. Bread moulds are common examples of fungi.
- **Protozoa:** They mainly include organisms such as Amoeba, Plasmodium, etc. They can be unicellular or multicellular.
- **Virus:** Viruses are disease causing microbes that reproduce only inside the host organism.
- **Algae:** They include multicellular, photosynthetic organisms such as Spirogyra, Chlamydomonas, etc.

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

Ans. The microorganisms which can fix atmospheric nitrogen are Rhizobium, Azatobactor, Blue green algae etc.

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

Ans. The usefulness of microorganisms are as follows:

- Lactobacillus is used to form curd from milk.
- Rhizobium present in the roots of pulse plants fix nitrogen from air and supply nitrogen compounds to the pulse plants.
- Microorganisms are also used in winemaking, baking, pickling, and other food making processes.
- Alcoholic fermentation by yeast is widely used in the preparation of wine and bread.
- Microbes are used to reduce pollution. For example, decomposers such as bacteria and fungi break down dead bodies and excreta to form inorganic compounds, which can be absorbed by plants.
- Microbes also play an important role in the preparation of medicines. Antibiotics are chemicals produced by microorganisms to kill bacteria. Penicillin is an antibiotic made from *Penicilium*.
- Bacteria present in our intestine helps in proper digestion and release Vitamin B which is absorbed by intestine.
- Many vaccines are prepared from microorganisms. These vaccines are given to children to protect them from disease.
- Certain microbes are also used in the biological treatment of sewage and industrial effluents.
- Yeast is used in making idlis, bread, pastries and cakes.

8. Write a short paragraph on the harms caused by microorganisms?

Ans. Microorganisms cause diseases in animals. For example, in humans, bacteria cause diseases such as tuberculosis, cholera, typhoid, etc. In cattle, the foot and mouth disease is caused by a virus. Also, several microbes cause diseases in plants. For example, the productivity of wheat, orange, apple, etc. is reduced due to microbial diseases in plants. Certain microbes, on entering into our body, produce toxic substances. This leads to food poisoning. Some microorganisms such as fungus spoil our food. For example, bread when left unused under moist conditions gets spoilt by fungus, producing a white cottonlike growth on the bread.

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

Ans. The medicines that kill or stop the growth of the disease-causing microorganism are called antibiotic. Streptomycin, tetracycline, erythromycin etc. are common antibiotics. They are manufactured by growing specific micro-organisms and are used to cure a variety of diseases.

Following precautions must be taken in using antibiotics-

- These medicines should be taken only on the advice of a qualified doctor.
 - One must finish the course prescribed by the doctor.
 - If anybody takes antibiotics when not needed, his or her body may develop resistance against that antibiotic.
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