

## Exercises

### Question 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 \_\_\_\_\_.

### Answer 1:

- (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 microorganisms.
- (d) Cholera is caused by bacteria.

### Question 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

**Answer 2:**

- (a) Alcohol
- (b) Streptomycin
- (c) Female Anopheles mosquito
- (d) Housefly
- (e) Growth of yeast cells
- (f) Fermentation

**Question 3:**

Match the organisms in Column I with their action in Column II.

Column I

- (i) Bacteria
- (ii) Rhizobium
- (iii) Lactobacillus
- (iv) Yeast
- (v) A protozoan
- (vi) A Virus

Column II

- (a) Fixing Nitrogen
- (b) Setting of curd
- (c) Baking of bread
- (d) Causing Malaria
- (e) Causing Cholera
- (f) Causing AIDS
- (g) Producing antibodies

**Answer 3:**

- |                     |                     |
|---------------------|---------------------|
| (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    |

**Question 4:**

Can microorganisms be seen with the naked eye? If not, how can they be seen?

**Answer 4:**

No, microorganisms cannot be seen by naked eye as they are very small and are called microbes. They can be seen with the help of *microscope*.

**Question 5:**

What are the major groups of microorganisms?

**Answer 5:**

Microorganisms are classified into four major groups are bacteria, fungi, protozoa and some algae.

**Question 6:**

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

**Answer 6:**

Bacteria such as rhizobium and certain blue-green algae present in the soil can fix atmospheric nitrogen and convert into usable nitrogenous compounds, which are used by plants for the synthesis of plant proteins and other compounds.

**Question 7:**

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

**Answer 7:**

Microorganisms are too small to be seen through naked eyes. However, they are vital to plants and the environment.

*Importance of microorganisms:*

- They are used in winemaking, baking, pickling and other food making processes.
- Alcoholic fermentation by yeast is widely used in the preparation of wine and bread.
- A bacterium lactobacillus promotes the formation of curd.
- Microbes are used to reduce pollution.
- They are used to increase the soil fertility by fixing the atmospheric nitrogen.
- Microbes are also useful in preparing many medicines and antibiotics.
- Certain microbes are also used in the biological treatment of sewage and industrial effluents.

**Question 8:**

Write a short paragraph on the harms caused by microorganisms.

**Answer 8:**

Microorganisms are harmful in many ways. Some of the microorganisms **cause diseases** in human beings, plants and animals. Such disease-causing microorganisms are called pathogens. Some microorganisms **spoil food, clothing and leather**. Some of the common diseases affecting humans are cholera, common cold, chicken pox and tuberculosis. Several microorganisms not only cause diseases in humans but also in animals. For example, anthrax is a dangerous human and cattle disease caused by a bacterium. Disease causing microorganisms in plants like wheat, rice, potato, sugarcane, orange, apple and others reduce the yield of crops.

**Question 9:**

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

**Answer 9:**

The medicines that kill or stop the growth of the disease – causing microorganisms are called antibiotics.

For example: Streptomycin, tetracycline, etc.

*Following precautions must be taken while taking antibiotics:*

- Antibiotics should be taken only on the advice of a qualified doctor.
- One must finish the course prescribed by the doctor.
- Antibiotics must be avoided when not needed or in wrong doses.