



MICROORGANISMS: FRIEND AND FOE

Chapter: 2



EDUCATION SOURCE

CLASS: - 8TH
science

Chapter: 2

MICROORGANISMS: FRIEND AND FOE

Exercises:

Q1:- Fill in the blanks:

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

Ans:

Q2:- Tick the correct answer.

a) Yeast is used in the production of

- (i) Sugar
- (ii) Alcohol
- (iii) hydrochloric acid
- (iv) oxygen

Ans: (ii) **Alcohol.**

b) The following is an antibiotic

- (i) Sodium bicarbonate
- (ii) Streptomycin
- (iii) Alcohol
- (iv) Yeast

Ans: (ii) **Streptomycin.**

c) Carrier of malaria-causing protozoan is

- (i) female Anopheles mosquito
- (ii) cockroach
- (iii) housefly
- (iv) butterfly

Ans: (i) **Female Anopheles mosquito**

d) The most common carrier of communicable diseases is

- (i) Ant
- (ii) Housefly
- (iii) Dragonfly
- (iv) Spider

Ans: (ii) **Housefly**

e) The bread or idli dough rises because of

- (i) Heat
- (ii) Grinding
- (iii) growth of yeast cells
- (iv) kneading

Ans: (iii) growth of yeast cells

f) The process of conversion of sugar into alcohol is called

- (i) Nitrogen Fixation
- (ii) Moulding
- (iii) Fermentation
- (iv) Infection

Ans: (iii) Fermentation

Q3:- 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

Ans:

(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	g) Producing antibodies

Q4:- Can microorganisms be seen with the naked eye? If not, how can they be seen?

Ans: NO, we Can microorganisms be seen with the naked eye. They can be seen with the help of microscope.

Q5:- What are the major groups of microorganisms?

Ans: The major groups of microorganisms are Bacteria, fungi, protozoa, and some algae.

Q6:- Name the microorganisms which can fix atmospheric nitrogen in the soil.

Ans: Rhizobium, azotobacter, blue-green algae etc.

Q7:- Write 10 lines on the usefulness of microorganisms in our lives.

Ans: 10 lines on the usefulness of microorganisms in our lives are: -

- (i) Certain microorganisms are used in food production, such as the production of cheese, yogurt, and bread.
- (ii) They are used in agricultural practices, including the production of fertilizers and in biocontrol of pests and diseases.
- (iii) They are used in the production of pharmaceuticals, including antibiotics.
- (iv) They are used in the production of various chemicals, including ethanol.
- (v) Microorganisms are critical to the functioning of the human digestive system, helping to break down food.
- (vi) Microorganisms play a vital role in the carbon and nitrogen cycles like Rhizobium, azotobacter, blue-green algae.
- (vii) Microorganisms play a vital role in maintaining the balance of ecosystems by participating in nutrient cycling.
- (viii) They are used in scientific research, including genetic studies.
- (ix) Microorganisms are used in the production of enzymes.
- (x) They are used in the production of food additives and flavourings, improving the taste and quality of processed foods.

Q8:- Write a short paragraph on the harmful effects of microorganisms.

Ans: Microorganisms can have harmful effects on our lives in various ways. Certain microorganisms can cause diseases in humans, animals, and plants, leading to illnesses, deaths, and economic losses.

For Example: - Such microorganisms include bacteria, viruses, fungi, and parasites, which can cause illnesses such as influenza, tuberculosis, malaria, and food poisoning. Also, microorganisms can cause spoilage of food and other perishable products, leading to food waste and economic losses.

some microorganisms can cause environmental damage, such as harmful algal blooms, which can lead to the depletion of oxygen in water bodies, leading to the death of aquatic animals and other negative effects on the ecosystem.

Q9:- What are antibiotics? What precautions must be taken while taking Antibiotics?

Ans: Antibiotics are a class of drugs used to treat and prevent bacterial infections. They work by either killing bacteria or inhibiting their growth, depending on the type of antibiotic.

Some Precautions must be taken while taking antibiotics: -

- (a) Only take antibiotics when prescribed by a healthcare professional.

- (b) Take antibiotics at the recommended time intervals and in the recommended doses.
- (c) Do not stop taking antibiotics early, even if you feel better.

Key words

a) **ALGAE:** - Algae are aquatic, photosynthetic organisms that play an important role in aquatic ecosystems and various industries.



b) **ANTIBIOTICS:** - Antibiotics are a type of medication that inhibit the growth or kill bacteria, often used to treat bacterial infections in humans and animals.

c) **ANTIBODIES:** - Antibodies are specialized proteins produced by the immune system in response to foreign substances such as bacteria, viruses, and other pathogens, which helps to neutralize and remove them from the body.

d) **BACTERIA:** - Bacteria are single-celled microorganisms found in all environments, some of which are harmful while others are beneficial.



e) **CARRIER:** - A carrier is a person or animal that harbours and can spread a pathogen to others without showing symptoms of the disease.

f) **COMMUNICABLE:** - Communicable refers to a disease that can be transmitted from one person to another through direct or indirect contact, such as through the air, bodily fluids, or contaminated surfaces.

g) **DISEASES:** - Diseases are abnormal conditions that cause physical or mental impairment, and can be caused by a variety of factors.

h) **FERMENTATION:** - This process of conversion of sugar into alcohol is known as fermentation.

i) **FUNGI:** - Fungi is a multicellular organism that absorb nutrients from their surroundings and play important roles in ecosystems, as well as being used in various industries.

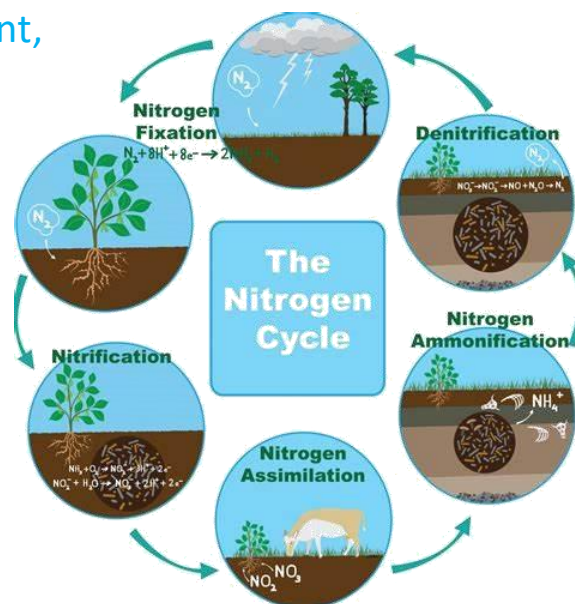


j) **LACTOBACILLUS:** - Lactobacillus is a lactic acid-producing bacteria commonly found in the human body and in fermented foods, also promotes the formation of curd.



k) **MICROORGANISM:** - Microorganisms are small, single-celled or multicellular organisms, such as bacteria, viruses, fungi, algae, and protozoa. They are found in environment on Earth and play important roles in biogeochemical cycles, ecosystem processes, and human health.

l) **NITROGEN CYCLE:** - It is the process by which nitrogen is converted between its various chemical forms in the environment, including inorganic nitrogen gas, ammonia, nitrate, and organic compounds, through biological, physical, and chemical processes.



m) **NITROGEN FIXATION:** - Nitrogen fixation is the process by which certain bacteria convert atmospheric nitrogen gas into a usable form of nitrogen, such as ammonia, that can be taken up by plants to support growth and metabolism.

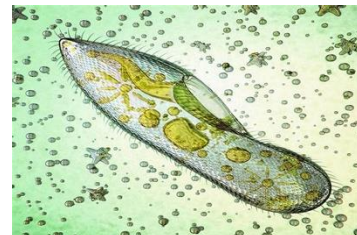
n) **PASTEURISATION:** - The Process in which the milk is heated to about 70°C for 15 to 30 seconds and then suddenly chilled and stored.

o) **PATHOGEN:** - A pathogen is a microorganism or agent, such as a virus, bacterium, fungus, or parasite, that can cause disease in a host organism.



p) PRESERVATION: - Preservation refers to the process of protecting and maintaining the quality, safety, and integrity of food, materials, or other objects through various methods.

q) PROTOZOA: - Protozoa are a diverse group of single-celled organisms, commonly found in soil, water, and other environments, and can also be parasitic or symbiotic in nature.



r) RHIZOBIUM: - Rhizobium is a genus of soil bacteria that are capable of fixing atmospheric nitrogen in the roots of leguminous plants.



s) VACCINE: - A vaccine is a biological preparation that contains a weakened or killed microorganism provide immunity against a particular infectious disease.



t) VIRUS: - Viruses are quite different from other microorganisms. They reproduce only inside the host organism: bacterium, plant or animal cell.

u) YEAST: - Yeast is a single-celled fungus used in baking and brewing, capable of fermenting sugars into alcohol and carbon dioxide, and found in many natural environments.

