



মণিপুরৰ শিক্ষা বিভাগ (সংস্কৃত)

DEPARTMENT OF EDUCATION (S)
Government of Manipur

CHAPTER - 2.

MICROORGANISMS: FRIEND AND FOE

SOLUTIONS

Exercises

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:

- (a) microscope
- (b) Nitrogen
- (c) yeast
- (d) bacteria

2. Tick the correct answer.

- (a) Yeast is used in the production of
 - (i) sugar (ii) alcohol (iii) hydrochloric (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) Bacterium	(a) Fixing nitrogen
(ii) <i>Rhizobium</i>	(b) Setting of curd
(iii) <i>Lactobacillus</i>	(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 → (f) Causing AIDS

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

Ans- No, microorganisms cannot be seen with the naked eye. They can be seen by using microscope.

5. What are the major groups of microorganism?

Ans: The major groups of microorganisms are:

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

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

Ans: *Rhizobium* and blue green algae

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

Ans- The usefulness of microorganisms in our lives are as follows:

1. Yeast is used in the production of alcohol and wine.
2. Bacteria and yeast are used for fermentation of rice *idlis* and *dosa* batter.
3. Bacterium, *Lactobacillus* is used to make curd from milk.
4. Many antibiotics are being produced from bacteria and fungi and helps in curing a variety of human, plant and animal diseases.
5. Many vaccines are made on a large scale from microorganisms to protect humans and other animals from several diseases.
6. Bacteria like *Rhizobium* can fix atmospheric nitrogen in the soil and increase the fertility of soil.

7. Microorganisms decompose dead organic waste of plants and animals converting them into manures.
8. Bacteria are also used in commercial production of acetic acid.
9. Yeast is used in baking industry for making breads, cakes and pastries.
10. Microorganisms also decompose the harmful and smelly dead organic waste of plants and animals into simple substances and thereby clean the environment.

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

Ans: Microorganisms are harmful in many ways. Some of the microorganisms cause diseases in human beings, plants and animals. Some common human diseases caused by microorganisms are Cholera, Polio, Malaria, etc. Anthrax is a dangerous disease caused by a bacterium in human and cattle. Citrus canker, Rust of wheat, Yellow vein mosaic of *bhindi* etc., are common plant diseases caused by microorganisms. Some microorganisms also spoil food, clothing and leather. Food poisoning is a serious illness caused by consumption of food spoiled by microorganisms.

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

Ans: Antibiotics are the medicines that kill or stop the growth of disease causing microorganisms.

Precautions that must be taken while taking antibiotics are:

- (i) Antibiotics should be taken only on the advice of a qualified doctor.
- (ii) We must complete the course prescribed by the doctor.
- (iii) Antibiotics must be taken in right doses when required. A wrong dose may make the drug less effective.



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Extra questions and Answers

1. Match the microorganisms given in column A to the group to which they belong in column

B.

A	B
1. <i>Lactobacillus</i>	a. Algae
2. <i>Spirogyra</i>	b. Protozoa
3. <i>Penicillium</i>	c. Fungi
4. <i>Amoeba</i>	d. Bacteria.

Ans : 1. *Lactobacillus* → d. Bacteria
2. *Spirogyra* → a. Algae
3. *Penicillium* → c. Fungi
4. *Amoeba* → b. Protozoa

2. Tick the correct answer.

(a) The group of microorganism to which yeast belongs is

- i. Bacteria ii. Algae iii. Fungi iv. Viruses

Ans: iii. Fungi

(b) *Bacillus anthracis* is the causative microorganisms of

- i. Anthrax ii. Foot and mouth disease iii. Cholera I chicken
fox

Ans: i. Anthrax

3. Name some common human disease caused by bacteria.

Ans: Tuberculosis, Cholera, Typhoid, etc

4. Name some friendly microorganisms.

Ans: Yeast, *Lactobacillus*, *Rhizobium*, etc

5. How is common cold spread from infected person to a healthy person?

Ans: When a person suffering from common cold sneezes, fine droplet of moisture carrying thousands of viruses are spread in air. The virus when enter the body of a healthy person while breathing cause infection.

6. Why should we not let water collect anywhere in our neighbourhood?

Ans: We should not let water collect anywhere in our neighbourhood because water is the breeding ground of mosquitoes which are carriers of many deadly diseases like malaria and dengue fever.

7. How does housefly act as a carrier of disease?

Ans: When houseflies sit on the garbage and animal excreta, pathogens stick to their bodies. And when these flies sit on uncovered food they transfer the pathogens. Whoever eats this contaminated food is likely to get sick.

8. What are antibodies?

Ans: Antibodies are substances or proteins which are produced by our body's defense mechanism to fight against the invading pathogens.

9. Why does a mango get spoilt in few days but a mango pickle does not spoil for a long time?

Ans: A mango gets spoilt in few days but a mango pickle does not because a mango pickle contains salt and edible oil which make it unfavourable for the growth of microorganisms.



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