

Board –CBSE

Class –8th

Topic – Microorganisms: Friend or Foe

1. Write a note on plant diseases caused by microorganisms.

| Plant diseases | Microorganism | Mode of transmission |
|--|---------------|----------------------|
| Citrus canker | Bacteria | Air |
| Rust of wheat | Fungi | Air seeds |
| Yellow vein virus insect mosaic of bhindi (Okra) | Virus | Insect |

Ans.

2. Explain some methods of food preservation.

Ans. Food preservation chemical method Sodium benzoate and sodium metabisulphite are common preservatives. These are also used in the jams and squashes to check their spoilage. Preservation by common salt salting is also used to preserve amla, raw mangoes, tamarind, preservation by sugar preservation by oil and vinegar use of oil and vinegar prevents spoilage of pickles heat and cold treatments Boiling kills many microorganisms. Low temperature inhibits the growth of microbes. Storage and packing

3. Explain some beneficial effects of microorganisms.

Ans. Microbes improve soil aggregation, which influences soil-water movement and aeration. They enhance nutrient levels through nutrient cycling and organic matter decomposition. They are essential in developing soil organic matter. Microbes degrade, Mineralize, and immobilize materials (organic matter, pesticides, and fertilizers) that turf managers apply to the soil. Microbes also form symbiotic (mutually beneficial) relationships with plants.

4. Name some protozoans known to you.

Ans. Amoeba, plasmodium, paramecium Entamoeba and Trypanosome.

5. Name any food item which is prepared by yeast.

Ans. Bread and wine are the two food items that are prepared using yeast.

6. What are harmful bacteria?

Ans. Microorganisms that are not good for us are called harmful microorganisms.

Microorganisms cause disease in animals, human beings, and plants therefore they are also called pathogens.

7. Name some examples of communicable diseases.

Ans. Tuberculosis, Sexually Transmitted Disease, Rabies, MRSA, Flu, HIV/AIDS, etc

8. What is food poisoning is occurred due to contaminated food products?

Ans. A microorganism that grows on food sometimes produces toxic substances this may cause serious illness or even death this is called food poisoning. So, the preservation of food is necessary to prevent it from being spoilt.

9. Explain pasteurization.

Ans. The heating of milk (a food, as cheese, yogurt, etc.) to high temperature and then suddenly chilled and stored is called pasteurization. Pasteurization is done to kill and control the growth of bacteria that can produce disease or cause spoilage or undesirable fermentation of food.

10. Briefly explain nitrogen cycle/ nitrogen fixation.

Ans. Nitrogen Fixation-Rhizobium helps in the fixation of atmospheric nitrogen in leguminous plants (pulses). Nitrogen cycle Our atmosphere has 78% of nitrogen gas.

Nitrogen constitutes part of the protein in living beings.

The amount of nitrogen in the atmosphere remains constant. A process which shows the amount of nitrogen in the atmosphere remains constant-

Nitrogen in atmosphere=>Some bacteria like blue-green algae fix atmospheric nitrogen in the soil=>From the soil nitrogen is used by plants=>Animals get protein and nitrogen from plants after eating them=>When animals and plants die bacteria and fungi decomposes them and converted into nitrogenous compounds=>Some bacteria convert these nitrogenous compound into nitrogen gas which ultimately goes back to the atmosphere.

Above nitrogenous compound is used by plants again. These processes go on and on thus the amount of nitrogen in the atmosphere remains constant.

11. Explain the use of microorganisms in increasing soil fertility.

Ans. Bacteria increase soil fertility through nutrient recycling such as carbon, nitrogen, sulphur and phosphorus. Bacteria decompose dead organic matter and release simple compounds in the soil, which can be taken up by plants. Nitrogen-fixing bacteria fix atmospheric nitrogen and increase the nitrogen content of the soil, which can be readily absorbed by plants. They also improve soil structure and increase the water-holding capacity of the soil.

12. Write some examples of antibiotics.

Ans. Antibiotics are a group of medicines that are used to treat infections caused by bacteria and

certain parasites. Antibiotics are produced by the use of bacteria. For example: Tetracycline, Streptomycin, erythromycin, Doripenem, Daptomycin, Clarithromycin, Penicillin G, Penicillin V, etc.

13. Write the use of microorganisms in a cleaning environment.

Ans. Microorganism converts dead and decaying parts of plants and animals into manure by decomposing them into simple substances. Thus the microorganism cleans up the environment.

14. How milk is converted into curd?

Ans. Lactobacillus denatures the structure of protein casein present in milk by producing Lactic acid it destroys the tertiary and quaternary structures of proteins thus globular protein is converted into fibrous protein which gives thick textures to the milk due to the coagulation of proteins. By this process, milk is converted into curd.

15. What are friendly microorganisms?

Ans. Friendly microorganisms are useful for us because they help in cleaning the environment by degrading dead and decaying substances, microorganisms are used in increasing soil fertility. Microorganisms are used in making cake, bread, and curd, etc.

16. Name some diseases cause by protozoans.

Ans.

- Malaria
- Giardiasis
- Trichomoniasis
- Sleeping Sickness
- Dysentery
- Amoebiasis

17. Name some diseases cause by bacterias.

Ans.

- Cholera,
- Typhoid Fever,
- Tuberculosis(TB),
- Leprosy (Hansen's Disease),
- SYPHILIS ETC

18. Name some viral diseases.

Ans.

- Smallpox
- The common cold
- Measles
- Chickenpox
- Hepatitis
- Influenza
- Polio
- Rabies
- HIV (the virus that causes AIDS)
- SARS (severe acute respiratory syndrome)
- Dengue

19. Explain the economic importance of fungi.

Ans. Fungi are used in industries in the production of bakery products. Yeast is a microorganism that multiplies rapidly in dough and produces carbon dioxide. This dough, when baked, yields porous and spongy cakes. Yeasts are used in the baking industry to provide puffiness to bread, cake, and other bakery products.

- Fungi can be used as food in the form of Mushrooms and Morels. Fungi can be used in the production of antibiotics.
- Fungi are used in the production of wine by the process of fermentation.
- Fungi can be used in the commercial production of organic substances like citric acid, fumaric acid, lactic acid, oxalic acid, etc.
- Fungi are used in agriculture to enhance the fertility of the soil.

20. What is fermentation?

Ans. It is the process of converting a complex organic substance into a simpler substance with the action of bacteria or yeast. During the process of breaking down of sugar, alcohol is formed and carbon dioxide is given off.