

Chapter 2

MICROORGANISMS FRIEND AND FOE

Questions & Answers:

Q1. Which of the following is a disease caused by protozoans?

Answer: Malaria

Solution:

Protozoans are eukaryotic, unicellular microorganisms. Most of them are free-living, found in soil and fresh water, while some are parasitic and cause diseases in plants and animals. Malaria is caused by the protozoan parasite, plasmodium.

- Tuberculosis (TB) is caused by a type of bacterium called *Mycobacterium tuberculosis*.
- Polio is a highly contagious infectious disease caused by polio virus.
- Typhoid fever is an acute infectious illness associated with fever that is most often caused by the *Salmonella typhi* bacteria.

Q2. Which of the following diseases is caused by a bacteria?

Answer: Tuberculosis

Solution:

- Tuberculosis is an air-borne disease caused by the bacterial species mycobacterium tuberculosis.
- Polio, Dengue and Chicken pox are viral diseases caused by Picornavirus, Flavivirus and Chicken pox virus respectively.

Q3. Some plants have nitrogen-fixing bacteria in their root nodules. What are these bacteria called?

Answer: Rhizobium

Solution:

Leguminous plants like pea have nitrogen-fixing bacteria called rhizobium in their root nodules. Rhizobium helps in converting atmospheric nitrogen into ammonia that can be utilized by the pea plant for its nutrition. Other bacteria like nitrosomonas and azotobacter are free-living soil bacteria that also help in nitrogen fixation.

Q4. In order to take precautionary steps to control dengue, we must take measures to stop the breeding of:

Answer: Aedes mosquito

Solution:

Dengue is caused by a virus and is spread by a species of mosquito called Aedes. The spread of this disease can be prevented by using mosquito nets, repellents and by control of breeding of mosquitoes by not allowing water stagnation in our surroundings.

Q5. Partial sterilization of a product such as milk at a high temperature is known as:

Answer: Pasteurization

Solution:

Pasteurization is a process in which milk is heated to about 70°C for 15 to 30 seconds and then suddenly chilled and stored. By doing so, it prevents the growth of microbes. This process was discovered by Louis Pasteur and hence is called pasteurization.

Q6. Living organisms which are invisible to the naked eye are called

Answer: Microorganisms

Solution:

Living organisms which are invisible to the naked eye are called microorganisms. Microorganisms are too small to be seen with our naked eyes. They can be seen only through a device known as a microscope.

Q7. Which of the following is a communicable disease?

Answer: Chicken pox

Solution:

Chicken pox is a communicable disease. Communicable diseases are caused by pathogens and can be spread from one person to another through water, air, soil etc.

Q8. Vaccines are made up of:

Answer: Weak microorganisms

Solution:

A vaccine is a biological preparation containing weakened or dead microbes. It is introduced into a healthy person's body so that it can produce antibodies against the disease causing microbes. Vaccines can be injected or administered orally.

Q9. The bacterium present in curd is:

Answer: Lactobacillus

Solution:

Lactobacillus is the microorganism present in curd. This bacterium converts milk into curd at 30 to 40°C.

Q10. While baking cakes, yeast reproduces rapidly and produces – gas.

Answer: Carbon dioxide

Solution:

While baking cakes, yeast reproduces rapidly and produces carbon dioxide gas. This gas is responsible for the spongy texture of cake.

Q11. Which is used for the production of alcohol and wine.

Answer: Yeast

Solution:

Yeast is used for the production of alcohol and wine by the process of fermentation.

Q12. Which of the following diseases can be cured using antibiotics?

Answer: Typhoid

Solution:

Antibiotics are the medicines that kill or stop the growth of disease-causing microorganisms. Streptomycin, tetracycline and erythromycin are some of the commonly known antibiotics which are made from fungi and bacteria. Antibiotics are mostly effective against bacterial diseases. Among the diseases given, only typhoid is caused by bacteria, i.e., *Salmonella typhi*, whereas all the other diseases are caused by protozoa or viruses.

Q13. Which organisms are microscopic and dependent on host organisms for reproduction?

Answer: Viruses

Solution:

Viruses are non-cellular microorganisms composed of protein, nucleic acids and lipids. Viruses are considered both living and non-living organisms. They are active inside host cells and reproduce inside them by infecting living cells. Outside a host it is considered non-living as it does not have a cellular machinery of its own.

Q14. What are the agents that act as carriers of a pathogen and spread diseases.

Answer: Vectors

Solution:

Animals or insects carry infecting agents from a sick person to another potential host. These animals are thus the intermediaries and are termed as vectors. The most common vectors are mosquitoes.

Q15. An infectious disease is

Answer: Spread from person to person

Solution:

Infectious diseases are caused by any pathogenic microorganisms such as bacteria, viruses, parasites or fungi. The diseases can be spread, directly or indirectly, from one person to another.

Q16. Which one of the following is not a method of food preservation?

Answer: Boiling

Q17. Which among the following statements is not associated with food preservation?

Answer: Decreased shelf life

Solution:

- Food preservation is the prevention of growth of bacteria, fungi and other microorganisms in food items.

- There are different methods of preserving food. For example, packaging, smoking, drying, pickling etc.
- Food preservation also prevents spoilage of food and increase their shelf life.

Q18. Which one of the following is not produced by the process of fermentation?

Answer: Milk

Solution:

The breakdown of carbon containing substances like carbohydrates in the absence of oxygen by microorganisms like yeast and bacteria is termed as fermentation. Fermentation is involved in making bread, vinegar, yoghurt, wine, cider, cocoa, cheese, etc.

Q19. A plant disease called citrus canker is caused by a

Answer: Bacteria

Solution:

Citrus canker is a plant disease caused by bacteria. It's mode of transmission is through air.

Q20. Which among the following statements is not associated with food preservation?

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Q21. Which among the following pathogens causes Cholera?

Answer: Bacteria

Solution:

Cholera is caused by bacteria. It spreads through contaminated food and water. It can be prevented by consuming properly cooked food and drinking boiled water.

