Class 8 Science Chapter 2 Important Questions

Class 8 Science Chapter 2 Important Questions Set – 1

Where do microorganisms live? Discuss.

Microorganisms may be single-celled like bacteria, some algae and protozoa, or multicellular, such as algae and fungi. They can survive under all types of environment, ranging from ice cold climate to hot springs and deserts to marshy lands. They are also found inside the bodies of animals including humans. Some microorganisms grow on other organisms while others exist freely. Microorganisms like amoeba can live alone, while fungi and bacteria may live in colonies.

How does microorganisms increase the soil fertility?

Microorganisms play an important role in our lives. Microorganisms are used for various purposes. For example, the organic wastes (vegetable peels, remains of animals, faeces, etc.) are broken down into harmless and usable substances by bacteria. Bacteria are also used in the preparation of medicines. In agriculture they are used to increase soil fertility by fixing nitrogen.

Which bacteria is responsible for making curd?

Curd contains several micro-organisms. Of these, the bacterium “Lactobacillus” promotes the formation of curd. It multiplies in milk and converts it into curd.

Microbes or Microorganisms

There are some living organisms around us which we cannot see with eyes alone. These microorganisms or microbes are so small in size that they cannot be seen with the unaided eye.

Therefore, these are known as microorganisms or microbes. Microorganisms are classified into four major groups. These groups are bacteria, fungi, protozoa and some algae.

Class 8 Science Chapter 2 Important Questions Set – 2

With the help of activity, which condition is known as “fermentation”?

Microorganisms are used for the large-scale production of alcohol, wine and acetic acid (vinegar). Yeast is used for commercial production of alcohol and wine.
Take a 500 mL beaker filled up-to 3/4 with water. Dissolve 2-3 teaspoons of sugar in it. Add half a spoon of yeast powder to the sugar solution. Keep it covered in a warm place for 4-5 hours. Then solution gives a smell.
This is the smell of alcohol as sugar has been converted into alcohol by yeast. This process of conversion of sugar into alcohol is known as fermentation.

Name any two antibiotic medicine which are made from fungi and bacteria.

Streptomycin, tetracycline and erythromycin are some of the commonly known antibiotic medicines which are made from fungi and bacteria.

Discuss, how does a vaccine work in our body?

When a disease-carrying microbe enters our body, the body produces antibodies to fight the invader. The body also remembers how to fight the microbe if it enters again. So, if dead or weakened microbes are introduced in a healthy body, the body fights and kills them by producing suitable antibodies. The antibodies remain in the body and we are protected from the disease- causing microbes. This is how a vaccine work in our body.

Name any three viruses caused diseases which are eradicated from most parts of the world.

COVID-19, Smallpox and Polio are led to its eradication from most parts of the world.

The Role of Antibiotics

Whenever we fall ill the doctor may give us some antibiotic tablets, capsules or injections such as of penicillin. The source of these medicines is microorganisms. These medicines kill or stop the growth of the disease-causing microorganisms. Such medicines are called antibiotics.

These days a number of antibiotics are being produced from bacteria and fungi. The antibiotics are manufactured by growing specific microorganisms and are used to cure a variety of diseases. Antibiotics are even mixed with the feed of livestock and poultry to check microbial infection in animals. They are also used to control many plant diseases.

Class 8 Science Chapter 2 Important Questions Set – 3

Boojho and Paheli are surprised to know that how do waste of plant, vegetable and fruits converted into manure? Will you help them to understand?

The plant waste has been converted into manure by the action of microbes. The nutrients released in the process could be used by the plants again.
We often see large amounts of dead organic matter in the form of decaying plants and sometimes dead animals on the ground. We find that they disappear after some time. This is because the microorganisms decompose dead organic waste of plants and animals converting them into simple substances. These substances are again used by other plants and animals.
Thus, microorganisms can be used to degrade the harmful and smelly substances and thereby clean up the environment.

"We should keep a handkerchief on the nose and mouth while sneezing". Why?

When a person suffering from common cold and sneezes, fine droplets of moisture carrying thousands of viruses are spread in the air. The virus may enter the body of a healthy person while breathing. That's why, we should keep a handkerchief on the nose and mouth while sneezing

"It is advisable to always keep food covered". Why?

There are some insects and animals which act as carriers of disease- causing microbes. Housefly is one such carrier. The flies sit on the garbage and animal excreta. Pathogens stick to their bodies. When these flies sit on uncovered food, they may transfer the pathogens.
Whoever eats the contaminated food is likely to get sick. So, it is advisable to always keep food covered. Avoid consuming uncovered items of food.

Which mosquitoes are known as carrier of dengue virus and carrier of parasite of malaria?

"Female Aedes" mosquito acts as carrier of dengue virus. Another example of a carrier is the "female Anopheles" mosquito, which carries the parasite of malaria.

Communicable Disease

Microbial diseases that can spread from an infected person to a healthy person through air, water, food or physical contact are called communicable diseases.

Generally, pathogens spread as they enter our body through the air we breathe, the water we drink or the food we eat. They can also get transmitted by direct contact with an infected person or carried through an animal.

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How can you control the spread of malaria and dengue? Suggest any two ways.

All mosquitoes breed in water. First, we should not let water collect anywhere, in coolers, tyres, flower pot etc. Second, by keeping the surroundings clean and dry we can prevent mosquitoes from breeding.

Write down the preventive measures of cholera and typhoid which are caused due to bacteria.

The transmission of bacteria caused cholera and typhoid diseases due to contaminated food and water. Therefore, general preventive measures are maintaining personal hygiene and good sanitary habits. Consume properly cooked food and boiled drinking water. And take consult with doctor.

What do you mean by “preservatives”? Write down the two ways of food preservative.

We know that bread left unused under moist conditions is attacked by fungus. Microorganisms spoil our food. Spoiled food emits bad smell and has a bad taste and changed colour.
A preservative is a substance or a chemical that is added to products such as food products, beverages, paints, biological samples, cosmetics, wood, and many other products to prevent decomposition by microbial growth or by undesirable chemical changes.
Therefore, salts and edible oils are the common chemicals generally used to check the growth of microorganisms. Therefore, they are called preservatives.
The two ways of food preservative are:
i)Common salt has been used to preserve meat and fish for ages. Meat and fish are covered with dry salt to check the growth of bacteria.
ii)Use of oil and vinegar prevents spoilage of pickles because bacteria cannot live in such an environment.

Why should we avoid standing close to the tuberculosis patient while he or she is coughing?

Tuberculosis is an airborne disease which is easily spreads when the infected person cough. As coughing is spreads germs in the air and these germs remain suspended in air until inhaled by person present in proximity of the patient who is suffering from the disease. That is why we should avoid standing close to a TB patient.

Pasteurization

Boiling kills many microorganisms. Low temperature inhibits the growth of microbes. Pasteurized milk can be consumed without boiling as it is free from harmful microbes.

The milk is heated to about 70 degree Celsius 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". Therefore, it is called pasteurization.

Class 8 Science Chapter 2 Important Questions Set – 5

Write "five to six" lines on the usefulness of microorganisms in our lives.

Microorganisms are too small to be seen through naked eyes. However, they are vital to plants and the environment.
Importance of microorganisms:
1)They are used in wine making, baking, pickling and other food making processes.
2)Alcoholic fermentation by yeast is widely used in the preparation of wine and bread.
3) A bacterium lactobacillus promotes the formation of curd.
4) They are used to increase the soil fertility by fixing the atmospheric nitrogen.
5) Microbes are also useful in preparing many medicines and antibiotics.
6) Certain microbes are also used in the biological treatment of sewage and Industrial effluents.

How do vaccines work?

Vaccines contain dead for weakened microbial strains of a particular disease. When a vaccine is introduced into a healthy body. It produces specific cells against the pathogen. These cells are called antibodies and they become active when the pathogen affect our body. The body fights and kills them by producing specific set of reactions. These antibodies remain in the body for life long and protect against the microbe when microbe enters the body again. Vaccines can be given either orally (in the forms of drops) or injected in the body.

Write a short paragraph on the harms caused by microorganisms?

Microorganisms are harmful in many ways. Some of the microorganisms are 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 disease is affecting humans are common cold, chicken pox and tuberculosis. Several micro-organisms not only cause diseases in humans but also in animals.
For example, “Anthrax” is a dangerous human and cattle disease is caused by a bacterium. Disease causing microorganisms in plants like wheat, rice, potato, sugarcane, orange, apple and others reduce the yield of crops.

While returning from a school, Boojho ate chaat from a street hawker. When he reached home, he felt ill and complained of stomach ache and feel ill. What could be the reason?

The reason could be that the chaat was contaminated by pathogenic microorganisms. The unhygienic conditions present near the shop becomes the breeding place for microbes, flies etc. The pathogens can be transmitted to places by flies and other vectors, even the utensil used for serving could have been contaminated by the pathogenic microorganism. If such microbial contaminated food is consumed several diseases like diarrhoea, dysentery, cholera etc. may occur.

Nitrogen Cycle

Our atmosphere has 78% nitrogen gas. Nitrogen is one of the essential constituents of all living organisms as part of proteins, chlorophyll, nucleic acids and vitamins. The atmospheric nitrogen cannot be taken directly by plants and animals. Certain bacteria and blue green algae present in the soil fix nitrogen from the atmosphere and convert into compounds of nitrogen.
Once nitrogen is converted into these usable compounds, it can be utilised by plants from the soil through their root system. Nitrogen is then used for the synthesis of plant proteins and other compounds. Animals feeding on plants get these proteins and other nitrogen compounds.

When plants and animals die, bacteria and fungi present in the soil convert the nitrogenous wastes into nitrogenous compounds to be used by plants again. Certain other bacteria convert some part of them to nitrogen gas which goes back into the atmosphere. As a result, the percentage of nitrogen in the atmosphere remains more or less constant.