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Chapter-2

Microorganisms: Friends and foe

Notes -

Microorganisms - The organism that cannot be seen by our naked eyes and can only be observed through a microscope are called microorganisms.

- Major groups of Microorganism - Microorganisms are divided into following five groups -

(a) Bacteria
(b) Viruses
(c) Algae
(d) Fungi
(e) Protozoan

(a) Bacteria - Bacteria are very small and simplest organisms. For eg - Vibro, streptococcus etc.

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(b) Viruses - The word 'virus' means poisnous liquid. Virus are the smallest microorganisms.
For eg - HIV virus, Polio virus. etc.

(c) Algae - Algae is a group of simple plants. Algae in Latin means 'sea weeds'.
Eg - Volvox, Spirogyra. etc.

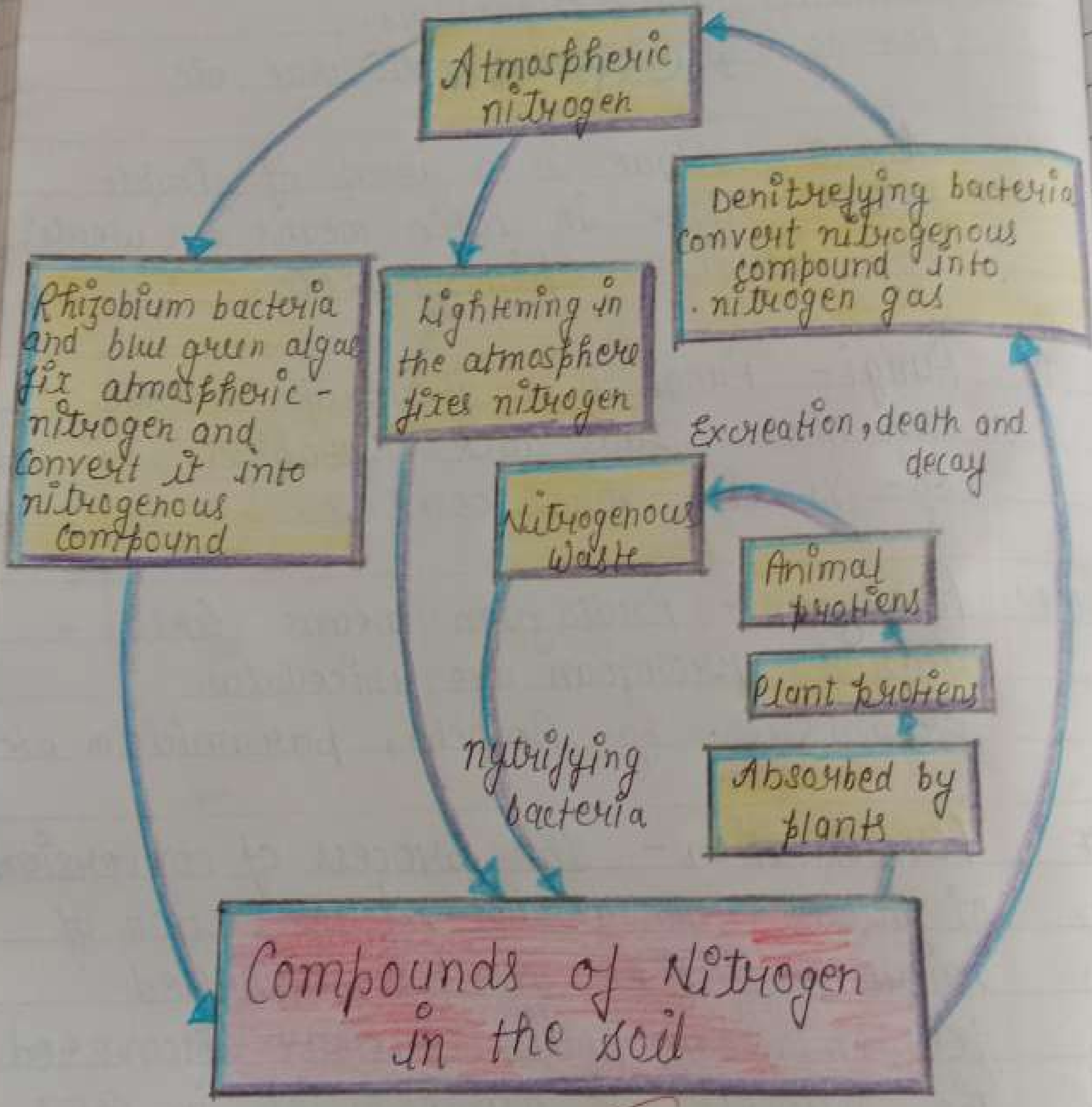
(d) Fungi - Fungi is a group of diverse organisms that lack chlorophyll.
Eg - Yeast, mushroom etc.

(e) Protozoan - Protozoan means first animal. Protozoan are unicellular organisms. Eg - Amoeba, paramicium etc.

Fermentation - The process of conversion of sugar into alcohol by the action of microbes, like yeast, is called fermentation. Louis Pasteur discovered the process of fermentation in 1857.

Antibiotics - The medicines produced by organisms such as bacteria and fungi that kill or stop the growth of the disease-causing microorganisms present in

Nitrogen Cycle



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our body are called antibiotics.

Vaccine- The small dose of dead and weakened disease-microbes used to stimulate immune response in the body is called vaccine.

Pathogens- The disease-causing microbes are called pathogens.

Communicable disease- Microbial disease that can spread from an infected person to other healthy person through air, water, food, physical contract or by animals are called communicable disease. Eg- cholera, common cold etc.

Food preservation- The food process by which spiolage of food is prevented by using chemical or physical method is called food ~~preventi~~ preservation.

Nytrogen cycle- The circulation of nitrogen through living things (plants and animals) and non-living environment is called mytrogen cycle.

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Short Answer -

Q.1- What is pesteurisation?

Ans= Pesteurisation is the process for preservation of milk. In this method, the milk is heated at about 70°C for 15 to 30 and cooled quickly to 10°c to kill bacteria.

Q.2 How do leguminious plant increase the fertility of soil?

Ans= Rhizobium bacteria absorb nitrogen gas from the atmosphere and convert into simpler nitrogenous compound, when roots decompose, the nitrates present in the root nodules mix with the soil and enrich it.

Q.3. What is ment by nitrifying bacteria?

Ans= The bacteria that converts the ammoni into nitrate and then in nitrate is known as nitrifying bacteria.

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Q.4 How do female Anepheles mosquito spread malaria?

Ans= While sucking the blood, female anopheles mosquitoes transmits plasmodium into human blood. It cause malaria.

Q.5 How do antibiotics work?

Ans= Antibiotics completely destroy the disease causing microorganisms in our body.

Short Answer - II

Q.1 (a) How do viruses differ from other microbes

Ans= Viruses are different from other microbes because they can only see by electron microscope, they cannot grow and reproduce by their own. However when they enter on a living cell they automatically reproduce.

(b) How does vaccine works ?

Ans- When vaccine enters in a body, the body of the person produces antibodies in response to entry of antigens to render them.

Q.2. (a) What would happen when microbes not perform this function ?

Ans- If microbs donot perform their function :

(a) We cannot perform the process of digestion completely.

(b) Any disease will not harm us.

(c) Every where wastes spread, as it didnot decompose.

(b) Being the student, how can you contribute in keeping the environment clean ? Give 2 ways

Ans- To keep the environment clean:

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(i) I use less plastic materials as it can not de compose.

(ii) I will plant more and more trees to conserve the enviroment.

Long Answer-

Q.1 Explain two methods of food preservation ? Also discuss the advantages.

Ans=(i) Preserving by common salt- The products are covered or mixes by common salt to prevent the growth of microbes. They are used to prevent, raw mangoes, amla etc.

(ii) Preservation by oil and vinager :- Oil and vinager prevent the growth of food spioling microbes. Pickles are preserved by this method.

Advantages -

(i) It decrease the wastage of food.

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(II) Nutrition value retained for a long period of time.

(III) It increases the availability of food during off seasons.

Q.2 Explain the process of nitrification and denitrification.

Ans- The conversion of nitrogen gas by denitrifying bacteria is called denitrification.

The conversion of ammonia into nitrates are called nitrification.

Q.3. Define the principles: (a) Bioling (b) canning (c) freezing (d) dehydration

Ans= Bioling - Bioling helps in preservation of food. Bioling check the growth of microbes. Milk is preserved by this method.

Canning- Canning is the method by which dry fruits and other food

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materials are preserved.

Freezing- Low temperature prevents the spoilage of food by inhibiting the growth of mibes

Dehydration- The process of removal of water from a substance is called dehydration. Sun-drying is the traditional method of sundryin preserving food.

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