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## Chapter – 2

### Microorganisms: Friend and Foe

- **Microorganisms:** Microorganisms are too small and are not visible to the unaided eye.
  - They can live in all kinds of environment, ranging from ice cold climate to hot springs and deserts to marshy lands.
  - Microorganisms are found in air, water and in the bodies of plants and animals.
  - They may be unicellular or multicellular.
  - Microorganisms include bacteria, fungi, protozoa and some algae. Viruses, though different from the above mentioned living organisms, are considered microbes.
  - Viruses are quite different from other microorganisms. They reproduce only inside the host organism; bacterium, plant or animal cell.
  - Some microorganisms are useful for commercial production of medicines and alcohol.
  - Some microorganisms decompose the organic waste and dead plants and animals into simple substances and clean up the environment.
  - Protozoans cause serious diseases like dysentery and malaria.
  - Some of the microorganisms grow on our food and cause food poisoning.
  - Some microorganisms reside in the root nodules of leguminous plants. They can fix nitrogen from air into soil and increase the soil fertility.
  - Some bacteria and blue green algae present in the soil fix nitrogen from the atmosphere and convert into nitrogenous compounds.
  - Certain bacteria convert compounds of nitrogen present in the soil into nitrogen gas which is released to the atmosphere.
  - **Pathogens:** Some of the microorganisms cause diseases in human beings, plants and animals. Such disease causing microorganisms are called pathogens.
  - **Cleaning of Environment:** 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. Microorganisms can be used to degrade the harmful and smelly substances and thereby clean up the environment.
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