



1. Bacteria cannot be seen with the naked eyes, but these can be seen with the help of a microscope. If you have to carry a sample from your home to your biology laboratory to demonstrate the presence of microbes under a microscope, which sample would you carry and why?

Ans: Soil sample/water sample as they are the natural habitat of micro-organisms and can be directly observed.

2. Give examples to prove that microbes release gases during metabolism.

Ans: (i) Making of dough for bread, dosa and idli with the help of fermenting microbes. Heat expels the gases and makes the food spongy.

(ii) Production of biogas

3. In which food would you find lactic acid bacteria? Mention some of their useful applications.

Ans: Milk, Curd and Cheese are coagulated product. Lactic acid bacteria (LAB) convert lactose sugar into lactic acid. They also improve the nutritional quality of curd by increasing vitamin B<sub>12</sub>.

Lactic acid bacteria are also found in the stomach where they check disease causing microbes.

4. Name some traditional Indian foods made of wheat, rice and Bengal gram (or their products) which involve use of microbes.

Ans: Idli, Dhokla, Dosa. Several food items such as dosa, idli, jalebi and bread are prepared by fermentation process in which one or more kinds of microbes are used.

5. In which way have microbes played a major role in controlling diseases caused by harmful bacteria?

Ans: By production of antibiotics like penicillin, tetracyclin, by production of vaccines for herpes, TB, DPT, etc.

6. Name any two species of fungus, which are used in the production of the antibiotics.

Ans: *Penicillium chrysogenum*, *P. notatum*, produce penicillin and *Cephalosporium* produces cephalosporins.

7. What is sewage? In which way can sewage be harmful to us?

Ans: Sewage is waste water release from household and industrial applications. It is harmful as

(i) it decreases flora and fauna of H<sub>2</sub>O.

(ii) contamination of H<sub>2</sub>O/food/soil.

(iii) dissemination of pathogenic bacteria.

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