

Microorganisms Friend and Foe

Q.1 Fill in the blanks:

- (a) Microorganisms can be seen with the help of a _____.
(b) Blue green algae fix _____ directly from air to enhance fertility of soil.
(c) Alcohol is produced with the help of _____.
(d) Cholera is caused by _____.

Answer:

- (a) Microorganisms can be seen with the help of a **microscope**.
(b) Blue green algae fix **nitrogen** directly from air to enhance fertility of soil.
(c) Alcohol is produced with the help of **yeast**.
(d) Cholera is caused by **bacteria**.

Q.2 Tick the correct answer:

- (a) Yeast is used in the production of
(i) Sugar (ii) Alcohol (iii) Hydrochloric acid (iv) Oxygen

Answer: (ii) Alcohol

- (b) The following is an antibiotic

- (i) Sodium bicarbonate (ii) Streptomycin (iii) Alcohol (iv) Yeast

Answer: (ii) Streptomycin

- (c) Carrier of malaria-causing protozoan is

- (i) Female Anopheles mosquito (ii) cockroach
(iii) Housefly (iv) Butterfly

Answer: (i) Female Anopheles mosquito

- (d) The most common carrier of communicable diseases is

- (i) Ant (ii) Housefly (iii) Dragonfly (iv) Spider

Answer: (ii) Housefly

- (e) The bread or idli dough rises because of

- (i) Heat (ii) Grinding
(iii) Growth of yeast cells (iv) Kneading

Answer: (iii) Growth of yeast cells

- (f) The process of conversion of sugar into alcohol is called

- (i) Nitrogen fixation (ii) Moulding (iii) Fermentation (iv) Infection

Answer: (iii) Fermentation

Q.3 Match the organisms in Column I with their action in Column II.

	Column I	Column II
i.	Bacteria	(a) Fixing nitrogen
ii.	Rhizobium	(b) Setting of curd
iii.	Lactobacillus	(c) Baking of bread
iv.	Yeast	(d) Causing malaria
v.	A protozoan	(e) Causing cholera
vi.	A virus	(f) Causing AIDS
		(g) Producing antibodies

Answer:

Column I	Column II
(i) Bacteria	(e) Causing cholera
(ii) Rhizobium	(a) Fixing nitrogen
(iii) Lactobacillus	(b) Setting of curd
(iv) Yeast	(c) Baking of bread
(v) A protozoan	(d) Causing malaria
(vi) A virus	(f) Causing AIDS

Q.4 Can microorganisms be seen with the naked eye? If not, how can they be seen?

Answer: Microorganisms are extremely small living organisms. We cannot see them through our naked eyes. To see these tiny microorganisms, we need to use electron Microscope.

Q.5 What are the major groups of microorganisms?

Answer: There are five major groups of micro-organisms:

(a) **Bacteria** – Bacteria is a single celled living organism which is responsible for diseases. They are found in Spiral shaped, rod shaped, spherical shaped, comma shaped.

(b) **Protozoa** – Protozoa are unicellular or multicellular. And they are very harmful to humans and other organisms. Amoeba and Plasmodium are the examples of protozoa.

(c) **Fungi** – Fungi are mostly multicellular and responsible for diseases like - ringworm and athlete's foot. They can grow on substance with very low moisture. Moulds on bread is a type of fungi.

(d) **Algae** – Algae are multicellular or unicellular. They contain photosynthetic pigments and produce food by the photosynthesis. Spirogyra, Chlamydomonas etc. are the examples of Algae. Disease like-diarrhea, nausea etc. caused by algae.

(e) **Virus** – Viruses are non living organism when it is outside the host. It is disease causing microorganisms which can only grow inside a host organism/cell. It can affect plants as well as animals. For example HIV (Human immuno deficiency virus) virus for humans and TMV (Tobacco mosaic virus) virus for plants.

Q.6 Name the microorganisms which can fix atmospheric nitrogen in the soil.

Answer: Bacteria like- Rhizobium, Clostridium and Azotobacter can fix atmospheric nitrogen in the soil and make nitrogenous compound which is very useful for the plants. Plants use these nitrogenous compounds to make proteins and other important compounds.

Q.7 Write 10 lines on the usefulness of microorganisms in our lives.

Answer: Microorganisms are very useful. Some of uses are:

- (i) Lactobacillus bacteria converts the milk into curd.
- (ii) Microorganisms are used in making of alcohol and wine.
- (iii) They are used in making pickles and other food products.
- (iv) Acetobacter acetic is used for making acetic acid from alcohol.
- (v) Yeast is used at home to make batter for fermented food.
- (vi) Antibiotics are made by growing specific microorganisms.
- (vii) Some bacteria like- Rhizobium fix atmospheric nitrogen and increase the soil fertility.
- (viii) Microorganisms yeast is also used in baking industry for making breads, pastries and cakes etc.
- (ix) Microorganisms are the one responsible for decaying the waste in the environment, they obtain nutrients from the dead plants and animals and decompose the waste.
- (x) Microorganisms are used in the preservation of food items.

Q.8 Write a short paragraph on the harms caused by microorganisms.

Answer: Microorganisms are responsible for various kind of diseases in humans, plants and animals. Diseases caused by microorganism (Bacteria, Protozoa, Algae, Fungi and Viruses) are tuberculosis, cholera, typhoid, diarrhea, nausea, vomiting, dysentery, malaria, Ringworm, cold, influenza, polio, chicken pox and AIDS etc. Various viruses are responsible for foot and mouth disease in animals. High yields of wheat, rice, apple, sugarcane etc can all be reduced due to effect of microorganisms. Microbes also spoil our food item and other objects.

Q.9 What are antibiotics? What precautions must be taken while taking antibiotics?

Answer: Antibiotics are medicine which we take to kill or stop the growth of the disease causing microorganisms. Antibiotics are made from the microorganisms. There are separate antibiotics for killing the bacteria, fungus and other organisms.

Penicillin, Tetracycline, Streptomycin are the examples of antibiotic which is used to cure variety of diseases. But one thing is important that antibiotics should be consumed under the supervision of a qualified doctor and the course of antibiotics should be completed as prescribed.