11. Cell Structure and Micro-organisms

Q. 1. Answer the following questions:

1) What is a 'cell'?

Ans. The fundamental, structural and functional unit of living organism is called a cell.

2) Name the different organelles in a cell?

Ans. Nucleus, endoplasmic reticulum, Golgi body, lysosomes, mitochondria plastids, vacuoles are all different cell organelles.

3) What are micro-organisms?

Ans. The organisms which cannot be seen with our eyes but can only be observed under a microscope are called micro-organisms.

4) What are the different types of micro-organisms?

Ans. Bacteria, virus, fungi, algae and protozoan are all the different types of micro-organisms.

Q.2. Fill in the blanks with the proper word.

(a) The organelle called the plastids is present in plant cells only.

(b) Garbage is converted into fertilizers by micro-organisms.

(c) In the cell, photosynthesis is carried out with the help of chloroplast.

(d) An electron microscope is necessary for the study of cell organelles.

3. What is difference between us?

(1) Plant cell and animal cell.

Plant cell	Animal cell
1. Plant cells have cell wall made up of cellulose.	1. Animal cells do not have cell wall.
2. The cytoplasm of the plant cells is lesser, granular and not dense.	2 The cytoplasm of animal cells is more granular and dense.
3. There are no lysosomes.	3. Lysosomes are present in the animal cells

4. The mitochondria are few in number.	4. The mitochondria are greater in number as compared to the plant cells.
5. Plastids are present only in plant cells.	5. Plastids are absent in the animal cells.

(2) Prokaryotic cell and eukaryotic cell.

Prokaryotic cell	Eukaryotic cell
1. The nucleus of prokaryotic cell is not distinct.	1.The nucleus of eukaryotic cell is distinct
2. The cell organelles if present are without membranes.	2. The cell organelles are always bound with membranes.
3. Mitochondria are absent in prokaryotic cell.	3.Mitochondria are present in eukaryotic cells.
4. Chlorophyll is present in the vesicles and not in plastids.	4.Chlorophyll is always inside the chloroplasts.

Q.5. Explain the uses and the harmful effects of micro-organisms.

Ans.

I. Uses of micro-organisms:

Micro-organisms decompose the wastes and sewage water. Micro-organisms help in the formation of curd and other milk-based products. The process of fermentation is used for producing alcohol from grains and fruits, bread from flour as well as in the production of acetic acid, citric acid, lactic acid, vitamins, antibiotics, etc. Processes like tanning of skin, production of ropes and strings from agave are also done with help of microbes. (7) Oil lick is cleared with the help of some specific bacteria.

II. Harmful effects of micro-organisms:

Micro-organisms spoil the food. Harmful microbes cause diseases in plants, animals and human. Microbes cause diseases like malaria, dengue, elephantiasis, yellow fever, chikungunya, Zika fever, etc. These diseases are

caused after mosquito transfers the microbes into human body. Common cold, cough, diphtheria, pneumonia, tuberculosis are diseases of respiratory tract which are caused by microbes.

Q. 6. Give scientific reasons:

(1) Diseases spread on a large-scale during periods of heavy rainfall and floods.

Ans. Diseases spread on a large-scale during periods of heavy rainfall and floods because it provides the favourable conditions for the growth of micro-organism which transmit diseases. After heavy rainfall and floods, water gets accumulated at places and acts as breeding grounds for mosquitoes and other micro-organisms. This leads to the transmission of microorganisms to their host and result in the development of disease.

(2) There is a possibility of food poisoning if we eat stale food.

Ans. The stale food is likely to have microbes in it. Some of the microbes produce enterotoxins. The enterotoxins cause food poisoning. Therefore, there is a possibility of food poisoning if we eat stale food.

(3) Soil is turned over during tilling.

Ans. There are some useful bacteria in the soil. They help to decompose organic substances into inorganic nutrients. Thereby they produce fertilizers. Some microbes also help in nitrogen fixation. They help the plants to get nitrogen. Thus, to have better yield of crop, the soil is turned over during tilling to mix the bacteria.

(4) Fungus grows quickly in moist or humid conditions.

Ans. The fungus needs suitable conditions for the growth. The moist and humid condition are favourable to it. It does not grow in dry conditions.

5) A refrigerator is used in almost every home.

Ans. The harmful microbes do not grow in cold temperatures, they grow only in the temperature range of 15^0 C to 35^0 C. Refrigerator has very low temperatures: Food can be stored there without spoiling. Therefore, to store perishable food

items refrigerators have become essential in every home.

6) Bread 'rises' during baking.

Ans. When the bread is prepared yeast is added to it. Yeast is a type of fungus. It undergoes process of fermentation in the batter of bread and releases carbon dioxide. Therefore, the bread rises during baking.

7) Fodder is soaked in water before offering to cattle.

Ans. By adding the fodder into water, it is fermented. By fermentation, the vitamin content rises in the fodder, and becomes easier for digestion. The cattle are thus well nourished. Therefore, fodder is soaked in water before offering to cattle.

Q.4. Sketch the plant cell and animal cell. Label it.