

Science

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(Chapter - 2) (Microorganisms: Friend and Foe)

(Class - 8)

Exercises



Question 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 1:

- (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 *microorganisms*.
- (d) Cholera is caused by *bacteria*.

Question 2:

Tick the correct answer:

- (a) Yeast is used in the production of
 - (i) sugar
 - (ii) alcohol
 - (iii) hydrochloric acid
 - (iv) oxygen
- (b) The following is an antibiotic
 - (i) Sodium bicarbonate
 - (ii) Streptomycin
 - (iii) Alcohol
 - (iv) Yeast
- (c) Carrier of malaria-causing protozoan is
 - (i) female Anopheles mosquito
 - (ii) cockroach
 - (iii) housefly
 - (iv) butterfly
- (d) The most common carrier of communicable diseases is
 - (i) ant
 - (ii) housefly
 - (iii) dragonfly
 - (iv) spider
- (e) The bread or idli dough rises because of
 - (i) heat
 - (ii) grinding
 - (iii) growth of yeast cells
 - (iv) kneading
- (f) The process of conversion of sugar into alcohol is called
 - (i) nitrogen fixation
 - (ii) moulding
 - (iii) fermentation
 - (iv) infection

Answer 2:

- (a) Alcohol
- (b) Streptomycin
- (c) Female Anopheles mosquito
- (d) Housefly
- (e) Growth of yeast cells
- (f) Fermentation

Question 3:

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

Column I

- (i) Bacteria
- (ii) Rhizobium
- (iii) Lactobacillus
- (iv) Yeast
- (v) A protozoan
- (vi) A Virus

Column II

- (a) Fixing Nitrogen
- (b) Setting of curd
- (c) Baking of bread
- (d) Causing Malaria
- (e) Causing Cholera
- (f) Causing AIDS
- (g) Producing antibodies

Answer 3:

- | | |
|---------------------|---------------------|
| (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 |

Question 4:

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

Answer 4:

No, microorganisms cannot be seen by naked eye as they are very small and are called microbes. They can be seen with the help of *microscope*.

Question 5:

What are the major groups of microorganisms?

Answer 5:

Microorganisms are classified into four major groups are bacteria, fungi, protozoa and some algae.

Question 6:

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

Answer 6:

Bacteria such as rhizobium and certain blue-green algae present in the soil can fix atmospheric nitrogen and convert into usable nitrogenous compounds, which are used by plants for the synthesis of plant proteins and other compounds.

Question 7:

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

Answer 7:

Microorganisms are too small to be seen through naked eyes. However, they are vital to plants and the environment.



Importance of microorganisms:

- They are used in winemaking, baking, pickling and other food making processes.
- Alcoholic fermentation by yeast is widely used in the preparation of wine and bread.
- A bacterium lactobacillus promotes the formation of curd.
- Microbes are used to reduce pollution.
- They are used to increase the soil fertility by fixing the atmospheric nitrogen.
- Microbes are also useful in preparing many medicines and antibiotics.
- Certain microbes are also used in the biological treatment of sewage and industrial effluents.

Question 8:

Write a short paragraph on the harms caused by microorganisms.

Answer 8:

Microorganisms are harmful in many ways. Some of the microorganisms **cause diseases** in human beings, plants and animals. Such disease-causing microorganisms are called pathogens. Some microorganisms **spoil food, clothing and leather**. Some of the common diseases affecting humans are cholera, common cold, chicken pox and tuberculosis. Several microorganisms not only cause diseases in humans but also in animals. For example, anthrax is a dangerous human and cattle disease caused by a bacterium. Disease causing microorganisms in plants like wheat, rice, potato, sugarcane, orange, apple and others reduce the yield of crops.

Question 9:

What are antibiotics? What precautions must be taken while taking antibiotics?

Answer 9:

The medicines that kill or stop the growth of the disease - causing microorganisms are called antibiotics.

For example: Streptomycin, tetracycline, etc.

Following precautions must be taken while taking antibiotics:

- Antibiotics should be taken only on the advice of a qualified doctor.
- One must finish the course prescribed by the doctor.
- Antibiotics must be avoided when not needed or in wrong doses.



Question 1:

What are the advantages of using CNG and LPG as fuels?

Answer 1:

The advantages of using CNG and LPG as fuels are:

- They are used as non-polluting fuels to transport vehicles.
- LPG and CNG both are easy to store and transport.
- CNG is used for power generation.
- These fuels have more energy per unit volume.
- LPG can be used directly for burning in homes and factories.
- These are easily available and have affordable cost.
- LPG and CNG has virtually no ash particles left after burning.

Question 2:

Name the petroleum product used for surfacing of roads.

Answer 2:

Bitumen is the petroleum product used for surfacing of roads.

Question 3:

Describe how coal is formed from dead vegetation. What is this process called?

Answer 3:

About 300 million years ago the earth had dense forests in low lying wetland areas. Due to natural processes, like flooding, these forests got buried under the soil. As more soil deposited over them, they were compressed. The temperature also rose as they sank deeper and deeper. Under high pressure and high temperature, dead plants got slowly converted to coal.

As coal contains mainly carbon, the slow process of conversion of dead vegetation into coal is called *carbonisation*.

Question 4:

Fill in the blanks:

- (a) Fossil fuels are _____, _____ and _____.
- (b) Process of separation of different constituents from petroleum is called _____.
- (c) Least polluting fuel for vehicle is _____.

Answer 4:

- (a) Fossil fuels are Natural Gas, Coal and Petroleum.
- (b) Process of separation of different constituents from petroleum is called refining.
- (c) Least polluting fuel for vehicle is CNG.

Question 5:

Tick True/False against the following statements:

- (a) Fossil fuels can be made in the laboratory. (T/F)
- (b) CNG is more polluting fuel than petrol. (T/F)
- (c) Coke is almost pure form of carbon. (T/F)
- (d) Coal tar is a mixture of various substances. (T/F)
- (e) Kerosene is not a fossil fuel. (T/F)

**Answer 5:**

- (a) Fossil fuels can be made in the laboratory. (False)
- (b) CNG is more polluting fuel than petrol. (False)
- (c) Coke is almost pure form of carbon. (True)
- (d) Coal tar is a mixture of various substances. (True)
- (e) Kerosene is not a fossil fuel. (False)

Question 6:

Explain why fossil fuels are exhaustible natural resources.

Answer 6:

Fossil fuels are formed over a period of millions of years, by the action of high temperature and high pressure on the remains of dead plants and animals. These fossil fuels are exhaustible natural resources because if these are exhausted by human activities, cannot be recreated in a short period of time.

Question 7:

Describe characteristics and uses of coke.

Answer 7:

Coke is a tough porous and black substance. It is produced by destructive distillation of coal.

- It is an almost pure form of carbon.
- It is used as domestic as well as an industrial fuel in stoves and furnaces.
- It is used in the manufacture of steel.
- It gives little or no smoke.
- It is used for extraction of metals.
- It can be used to make fuel gases.

Question 8:

Explain the process of formation of petroleum.

Answer 8:

Petroleum was formed from organisms living in the sea. As these organisms died, their bodies settled down at the bottom of the sea and got covered with sand and clay. The absence of air, high pressure and high temperature for over millions of years transformed the dead organisms into petroleum and natural gas. The petroleum deposits are usually found mixed with salt water. The petroleum is lighter than salt water, and hence, floats over it.

