



**GRADE 8**

**MICRO ORGANISMS**

**DATE:**

## BOOK BACK EXERCISE

### I. CHOOSE THE APPROPRIATE ANSWERS.

1. Which of the following cannot be classified as either living or non-living?

- a) fungi      b) bacteria      c) **viruses**      d) protozoa

2. *Amoeba* is a

- a) bacterium.      b) virus.      c) fungus.      d) **protozoa**.

3. Which of the following make their own food by photosynthesis?

- a) **algae**      b) viruses      c) fungi      d) protozoa

4. The unicellular organisms that sour milk to make curd are

- a) **bacteria**.      b) viruses.      c) fungi.      d) protozoa.

5. Which of the following is responsible for making bread soft and fluffy?

- (a) finely ground flour  
(b) sugar  
(c) alcohol given off during fermentation of sugar  
(d) **carbon dioxide gas given off during fermentation of sugar**

6. Which of these do not have a regular cell structure?

- a) bacteria      b) **viruses**      c) algae      d) protozoa

7. Which of these are found as both unicellular and multicellular organisms?

- a) bacteria      b) viruses      c) **algae**      d) protozoa

8. The bacterium *Lactobacillus* is useful in making

- a) **cheese**.      b) cake.      c) alcohol.      d) all of these

9. Microorganisms spread through

- a) air.      b) cuts.      c) water.      d) **all of these**

10. Which of these does not prevent growth of bacteria?

- a) salt      b) sugar      c) **water**      d) oil

### II. VERY SHORT ANSWER

1. What is the study of microorganisms known as?

**ANS:** The study of microorganisms is known as microbiology.

2. Microbes are disease-causing microorganisms. True or **false**?

3. All fungi are unicellular. True or **false**?

4. Under unfavourable conditions, microorganisms form a **cyst** around themselves.

5. What are spherical bacteria called?

**ANS:** Cocci.

6. A virus can reproduce on its own. True or **false**?

7. Where are algae mostly found—in water or on land?

**ANS:** Algae are mostly found in water bodies like ponds, lakes, rivers and seas.

8. Is the decomposition of the bodies of dead plants and animals by microorganisms desirable or undesirable?

**ANS:** The decomposition of dead plants and animals by microorganisms is desirable as it helps in recycling nutrients.

9. Name the class of medicines usually made from fungi or bacteria that can cure dangerous diseases.

**ANS:** Antibiotics is the class of medicines usually made from fungi or bacteria. Antibiotics can cure dangerous diseases.

10. Is yeast a bacterium or a fungus?

**ANS:** Yeast is a fungus.

11. The female *Aedes* mosquito is a carrier of the **denque** virus.

12. The foot and mouth disease is caused by a **virus**.

13. Food poisoning is caused by a toxin getting accidentally mixed with food. **True** or false?

14. What is heating milk to a high temperature and then cooling it quickly called?

**ANS:** Pasteurisation.

15. Salt forces microbes to lose water. **True** or false?

### III. SHORT ANSWER QUESTIONS.

1: What is a microorganism?

**ANS:** A microorganism is a tiny organism which can only be seen through a microscope. Example: bacteria, virus, protozoa, algae and fungi.

2. Name the five groups into which microorganisms are divided. Which of these have only unicellular organisms?

**ANS:** The five groups into which microorganisms are divided are bacteria, virus, protozoa, algae and fungi. Bacteria and protozoa have only unicellular organisms.

3. Name the three types of bacteria shown in this figure.



**ANS:**The three types of bacteria shown in this figure are:

a) cocci      b) bacilli      c) spirilla

4. What kind of living organisms are classified as algae? Give two examples.

**ANS:** Simple plant-like organisms that have cell walls and chlorophyll are classified as algae. They lack roots, stems or leaves, but are able to make their own food through the process of photosynthesis.

Two examples of algae are *Spirogyra* and *Fucus*.

5. Under what circumstances can viruses reproduce?

**ANS:** Viruses can reproduce only when they are inside the living cell of an organism. They multiply with the help of resources from the host cell.

6. Give one important use of algae.

**ANS:** Algae produce oxygen during photosynthesis that animals and humans use during respiration.

7. How does cooling help in food preservation?

**ANS:** Cooling helps in food preservation as microorganisms are not able to grow and reproduce at lower temperatures. Thus, food is preserved and microbial growth is prevented.

8. What causes food poisoning?

**ANS:** Microorganisms grow on food substances and produce toxins, turning food poisonous. Such spoiled food, when consumed, causes food poisoning.

9. What is pasteurization?

**ANS:** Heating milk to a high temperature of 70 degree celcius for about 30 seconds and then cooling it quickly is known as pasteurisation. This method kills most of the bacteria present in the milk and preserves it.

#### **IV. SHORT ANSWER QUESTIONS.**

1. How does mosquito help in spreading viruses/microorganisms?

**ANS:** Mosquitoes such as female *Anopheles* and *Aedes* are carriers of germs that cause malaria and dengue fever, respectively. When these mosquitoes bite a healthy person, they inject the germs into his body. Thus mosquitoes spread viruses and other disease-causing microorganisms.

2. Microorganisms are found even in places where no other life forms can exist. What makes microorganisms so hardy?

**ANS:** Microorganisms are found even in places where no other life forms can exist. They form a hard outer covering called a cyst around themselves that makes them hardy. Under unfavourable circumstances, they survive by remaining inside the cyst in an inactive form.

**3.** Which microorganism is used to make bread soft and fluffy? Discuss how this happens.

**ANS:** Yeast is used to make bread soft and fluffy. When yeast is mixed with the flour for making bread, it breaks down sugar and produces alcohol and carbon dioxide gas. When the bread is being baked, carbon dioxide gas escapes due to the heat, causing the bread to become soft and fluffy.

**4.** What is fermentation? Discuss its use in making alcoholic beverages.

**ANS:** The conversion of sugar into alcohol by yeast is known as fermentation. This process is used in the preparation of alcoholic beverages like beer and wine. Beer is produced by the fermentation of sugar in germinating barley and wine is prepared by fermentation of sugar in grapes.

**5.** How do viruses cause diseases?

**ANS:** A virus enters the living cell of an organism and uses the resources inside the host cell for its reproduction. It duplicates itself and then the host cell dies and finally bursts. The newly formed virus released from that cell starts invading the other cells. This process is repeated and in this way, many cells of the host organism are destroyed. As large numbers of host cells are destroyed, the person becomes ill.

**6.** How does a vaccine work?

**ANS:** Vaccines are produced from dead or weakened microorganisms such as bacteria or a virus. When vaccines are administered to a person, his body produces antibodies which fight against pathogens. These antibodies remain inside the body and provide protection from any future attack by that particular microorganism.

**7.** How does salt prevent food spoilage?

**ANS:** When salt is added to food, it forces the microorganisms to lose water by the process of osmosis. Thus, microorganisms are not able to grow in the food. In this way, salt prevents food spoilage.

**8.** What is 'dehydration' of food? In what way is this technique useful?

**ANS:** Dehydration of food means the removal of water from food. It is done by drying the food. Water is a medium required for the growth of microorganisms. Thus, this technique is useful as it stops the growth of microorganisms in the food.

**9.** Which microorganisms act as decomposers? How is this activity useful to us?

**ANS:** Bacteria, protozoa and fungi act as decomposers. These decomposers break down organic matter present in the bodies of dead plants and animals into simple substances and mix them in the soil. A plant growing in this soil absorbs the nutrients and passes them to the animals that consume the plant products. Thus, these microorganisms act as decomposers and help in recycling the nutrients in the soil.

## V. LONG ANSWER QUESTIONS

1. Why are viruses considered to be on the borderline of the living and non-living?

**ANS:** Viruses do not grow or reproduce by themselves, which makes them non-living. However, when a virus enters the living cell of an organism, it makes use of the resources in the host cell and starts reproducing. This makes viruses living, as reproduction is an important characteristic of a living organism. Due to this, viruses are considered to be on the borderline of the living and non-living.

2. Discuss three important ways in which bacteria are useful to us and two ways in which they are harmful.

**ANS:** The three important ways in which bacteria are useful to us are:

- 1) Formation of curd: When a small amount of curd (known as starter) is added to milk, the bacteria known as *Lactobacillus*, convert the milk into curd.
- 2) Nitrogen fixation: The bacteria known as *Rhizobium* live in the root nodules of leguminous plants. These bacteria fix the atmospheric nitrogen and convert it into nitrates that can be used by the plants.
- 3) Retting of jute: Bacteria help in separating jute fibres from the rest of the tissues of the jute plant. These fibres are used in making various articles.

Two ways in which bacteria are harmful to us are:

- 1) Diseases: Bacteria cause many diseases in humans like cholera and typhoid.
- 2) Food spoilage: Bacteria spoil food. Examples: putrefaction of meat and rotting of fruits and vegetables.

3. Discuss the different ways in which communicable diseases spread from person to person.

**ANS:** Communicable diseases spread from one person to another through various means. These are:

- 1) Through air: When a person suffering from cold or flu sneezes or coughs, germs are released that spread through the air.
- 2) Through contaminated food and water: When houseflies sit on garbage, germs stick to their bodies. When these houseflies sit on uncovered food or water, they contaminate the food or water by transferring the germs.
- 3) Through mosquitoes: Mosquitoes such as the female *Aedes* carry germs that cause dengue fever.
- 4) Through cuts and wounds: Microbes also enter our body through cuts or wounds.
- 5) Through direct contact: Diseases such as chickenpox can spread through direct contact from an infected person.

4. Discuss five methods of food preservation.

**ANS:** The following are the five methods of food preservation:

- 1) Heating: When food is heated at high temperature, all the microorganisms present in it are destroyed.

- 2) Pasteurisation: In this method, milk is heated at a high temperature for 30 seconds and then quickly cooled. This process kills the microorganisms present in milk.
- 3) Cooling: It prevents the growth and reproduction of microorganisms because microorganisms are not able to reproduce at low temperatures.
- 4) Drying: This process removes water from food. Since, microorganisms need water for their growth, drying food prevents the growth of microorganisms.
- 5) Canning: In this method, food is sterilised and then canned in airtight containers. This prevents the growth of microorganisms.

**COMPLETE THE HOTS AND BE A SCIENTIST QUESTION AND ANSWER.**