INDIAN SCHOOL AL WADI AL KABIR		
CLASS: VIII	**DEPARTMENT: SCIENCE 2026-27**	**DATE: 06/05/2026**
WORKSHEET NO: 2	**TOPIC: THE INVISIBLE LIVING WORLD: BEYOND OUR NAKED EYE**	**Note: A4 FILE FORMAT**
NAME OF THE STUDENT:	**CLASS & SEC:**	**ROLL NO.**

I. OBJECTIVE TYPE QUESTIONS

1. When yeast, sugar, and warm water are added to flour to make soft dough, what product is formed and what type of change takes place?
   (a) Oxygen is produced during respiration, which increases the volume of the dough.
   (b) Carbon dioxide is produced during respiration, which increases the volume of the dough.
   (c) Water vapour is produced during respiration, which decreases the volume of the dough.
   (d) Carbon dioxide is produced during respiration, which decreases the volume of the dough.
2. After throwing kitchen waste in an open area, it starts to rot and smell after a few days. Which of the following best explains this change?
   (a) Action of sunlight breaking down waste.
   (b) Growth of decomposing bacteria converting waste into simpler substances.
   (c) Cooling of the waste materials.
   (d) Absorption of water by the waste.
3. A farmer grows leguminous plants like peas and beans in his field, and notices improved soil fertility without adding fertilisers. What is the most likely reason?
   (a) Rhizobium in root nodules converts nitrogen into a usable form.
   (b) Roots produce oxygen for the soil.
   (c) Plants absorb more water from the soil.
   (d) Sunlight increases soil nutrients.

4. Identify the microorganism and its classification.

(a) Amoeba-Protozoa

(b) Mould-Bacteria

(c) Bread mould-Fungi

(d) Paramecium-Protozoa

5. A scientist is looking for a natural way to increase oxygen levels in a closed water tank. Which organism would be most helpful?

(a) Fungi

(b) Virus

(c) Protozoa

(d) Microalgae

6. A potato cell (non-green part of a plant) contains plastids but not chloroplasts. What is their main function?

(a) Photosynthesis

(b) Storage of substances

(c) Movement

(d) Digestion

7. A student observes two cells under a microscope. Cell A has a rigid outer layer and plastids, while Cell B lacks both these features. What can be concluded?

(a) Both are animal cells

(b) Cell A is a plant cell, and Cell B is an animal cell

(c) Cell A is an animal cell, and Cell B is a plant cell

(d) Both are plant cells

For question numbers 8-10, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (A), (B), (C) and (D) as given below -

(A) Both A and R are true, and R is the correct explanation of the assertion.

(B) Both A and R are true, but R is not the correct explanation of the assertion.

(C) A is true, but R is false.

(D) A is false, but R is true

8. **Assertion**: Microorganisms help in cleaning the environment.

Reason: They break down dead organic matter into simpler substances.

9. **Assertion:** Food spoils faster in cold conditions.

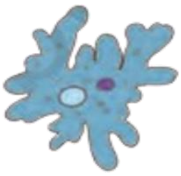
Reason: Microorganisms grow faster at moderate temperatures.

10. **Assertion:** Dry fruits and vegetables are sold nowadays in air-tight packets.

Reason: The sealed air-tight packets prevent the attack of microbes.

II. VERY SHORT ANSWER TYPE QUESTIONS (2M):

1. Identify the following microorganisms and their groups.



(A)

(B)

(C)

(D)

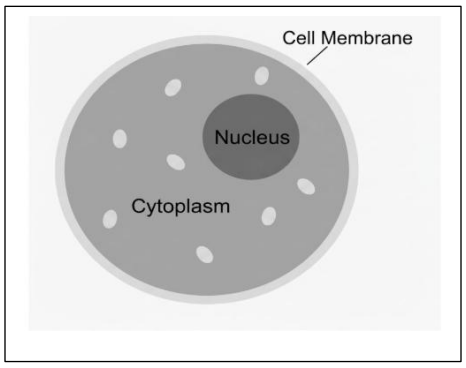
[Hint: A. Amoeba (Protozoa) B. Bacteria C. Chlamydomonas (Algae) D. Paramecium (Protozoa)]

2. a) State the functions of glycerin and stains in viewing cells through a microscope.

[Hint: Glycerin: It will prevent drying of the cells and improve clarity for better visualisation of cells.

Stains: It will give a colour to the cells and help us see them clearly.]

b) Draw a typical cell with its three basic parts labelled.



3. What is the role of microorganisms in cleaning the environment? [WB SA]

[Hint: Microorganisms decompose dead organic wastes of plants and animals and convert them into simple substances. The nutrients released in the process can be used by the plants again. Thus, microorganisms can be used to degrade waste substances into manure and thereby clean up the environment.]

4. Explain nitrogen fixation in leguminous plants.

[Hint: The leguminous plants such as beans and peas have root nodules which inhabit nitrogen-fixing Rhizobium bacteria. These plants and the bacteria live together in a symbiotic relationship, where both organisms benefit from each other. The bacterium provides nitrogen to the plant, and the plant gives food and shelter.]

5. Why are viruses considered to be on the borderline between living and non-living things?

[Hint: 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.]

6. Define a cell. Differentiate unicellular and multicellular organisms.

[Hint: A cell is the basic structural and functional unit of life.

UNICELLULAR ORGANISMS	**MULTICELLULAR ORGANISMS**
Unicellular organisms are made of only one cell and the single cell performs all life functions.	**Multicellular organisms are made of many cells working together.**
Example: Bacteria and Protozoa	**Example: Humans, Bread mould**

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III. SHORT ANSWER TYPE QUESTIONS (3M):

1. What are the different levels of organisation in the body of living organisms? Explain. [WB-LA]

[Hint: Cell – The basic structural and functional unit of life. All living organisms are made up of cells.

Tissue – A group of similar cells working together to perform a specific function.

Organ – Different tissues combine to form an organ that performs a particular function.

Organ System – A group of organs working together to carry out major body functions.

Organism – The complete living being formed by all organ systems working together.]

2. Differentiate between a plant cell and an animal cell. [WB-LA]

[Hint:

PLANT CELL	**ANIMAL CELL**
A cell wall is present.	**The cell wall is absent.**
Plastids and chloroplasts are present.	**Plastids and chloroplasts are absent**
Large central vacuole.	**Small or temporary vacuoles.**

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3. a) What happens during curd formation? Explain the role of bacteria in this process.

[Hint: Curd formation is a process of microbial action. When a small amount of curd is added to warm milk, it contains bacteria called Lactobacillus. These bacteria multiply rapidly and ferment the milk sugar (lactose) into lactic acid to form curd.]

b) What are the major threats faced by microalgal diversity?

[Hint: Pollution, climate change, and habitat destruction are threatening microalgal diversity and abundance.]

4. Give reasons for the following.

a) Microalgae help in maintaining oxygen balance in nature.

[Hint: Microalgae are microscopic plant-like organisms that make their own food using sunlight, and they release a lot of oxygen in this process.]

b) Raw vegetables and fruits are kept in refrigerators, whereas jams and pickles can be kept outside.

[Hint: Raw vegetables and fruits get easily infected by microorganisms and get spoiled. They are kept in a refrigerator as low temperature inhibits growth of microbes. Jams and pickles contain sugar and salt as preservatives. They inhibit the growth of microbes.]

c) Farmers prefer to grow beans and peas in nitrogen-deficient soils.

[Hint: Beans and peas are leguminous plants and have Rhizobium in their root nodules. These bacteria can fix atmospheric nitrogen to enrich the soil with nitrogen and increase its fertility.]

d) Microalgae Spirulina is called super food.

[Hint: Spirulina is a good source of vitamin B12, which is essential for our body. It has a lot of protein, which is more than 60 per cent of its body weight and only a small amount of fat and sugar. They are used in many health supplements and medicines.]

5. Explain fermentation with reference to yeast activity. [WB-LA]

[Hint: Fermentation is the process in which microorganisms like Yeast break down food to release energy under warm conditions, producing carbon dioxide, alcohol and other substances, which is useful in preparing foods like bread, cakes, etc.]

6. What is a foldscope?

[Hint: A low-cost and foldable paper microscope that make microscopic world accessible to many people. They do not provide the same level of details like high-powered laboratory microscope.]

IV. LONG ANSWER TYPE QUESTIONS (5M):

1. a) What is meant by food preservation? Briefly explain the various food preservation techniques.

[Hint: Food preservation is the method of preserving food from being spoiled by microbes. Different preservation techniques are:

i) Preservation by Common Salt: Meat and fish are covered with dry salt to prevent the growth of bacteria.

ii) Preservation by Sugar: Sugar reduces the moisture content, which inhibits the growth of bacteria which spoil food.

iii) Preservation by Oil and Vinegar: The use of oil and vinegar prevents the spoilage of pickles because bacteria cannot live in such an environment.

iv) Heat and Cold Treatments: Boiling kills many microorganisms. Low temperature inhibits the growth of microbes.

v) Storage and Packing: Things sealed in air- tight packets prevent the attack of microbes.]

b) What are the conditions for manure formation?

[Hint: Manure forms when organic waste decomposes under suitable conditions, such as the presence of microorganisms, adequate moisture, sufficient air (oxygen), and

warm temperature over time.]

V. CASE STUDY- BASED QUESTIONS/PASSAGE-BASED QUESTIONS:

Cells show a great variety in their shape and structure depending on the function they perform. For example, a Red Blood Cell is round and biconcave to easily carry oxygen, while a Nerve Cell is long and branched to transmit messages quickly throughout the body. Similarly, muscle cells are elongated to help in movement. Thus, the shape of a cell is closely related to its specific role.

Cells also differ in their internal structure. Plant cells have a cell wall, chloroplasts, and a large vacuole, whereas animal cells do not have these features. Some cells have special structures to perform specific functions efficiently. These variations help organisms carry out different life processes effectively and maintain proper functioning.

i) Why do cells have different shapes?

[Hint: Cells have different shapes because each type of cell is specialised to perform a specific function.]

ii) Give one example of how cell shape is related to its function.

[Hint: A nerve cell is long and branched, which helps it transmit messages quickly over long distances.]

iii) What is one structural difference between plant and animal cells?

[Hint: Plant cells have a cell wall and chloroplasts, while animal cells do not.]

ANSWERS FOR OBJECTIVE TYPE QUESTIONS 1 - 10

1. **(b) Carbon dioxide is produced during respiration, which increases the volume of the dough.**
2. **(b) Growth of decomposing bacteria converting waste into simpler substances.**
3. **(a) Rhizobium in root nodules converts nitrogen into a usable form.**
4. **(c) Bread mould-Fungi**
5. **(d) Microalgae**
6. **(b) Storage of substances**
7. **(b) Cell A is a plant cell, and Cell B is an animal cell**
8. **(A) Both A and R are true, and R is the correct explanation of the assertion.**
9. **(D) A is false, but R is true**
10. **(A) Both A and R are true, and R is the correct explanation of the assertion.**

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